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CONTRIBUTION, EXPLOITATION, AND MIGRATORY TIMING OF RETURNS OF SOCKEYE SALMON STOCKS TO LYNN CANAL IN 1986 BASED ON ANALYSIS OF SCALE PATTERNS

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December 1987

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Commissioner

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CONTRIBUTION, EXPLOITATION, AND MIGRATORY TIMING OF RETURNS OF SOCKEYE SALMON STOCKS TO LYNN CANAL IN 1986 BASED ON ANALYSIS OF SCALE PATTERNS[1]

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ABSTRACT

Visual interpretation of scale circuli patterns from three sockeye salmon (*O. nerka*, Walbaum) escapements provided the basis for estimating commercial catch contributions in Southeastern Alaska commercial fishing District 115. The freshwater growth zone of the circuli patterns provided the principal discriminatory characteristics. Chilkat Lake exhibited the largest freshwater growth zone, Chilkoot Lake the smallest, and the stock to Berners Bay and the mainstem of the Chilkat River a zone intermediate in size. The minimum estimate of total run of sockeye salmon to Lynn Canal in 1986 was 402,276 fish, of which 290,205 (72%) were harvested and 126,750 escaped to spawn. The Chilkat Lake run contributed 192,308 fish of which 168,361 (88%) were harvested and 23,947 escaped to spawn. Chilkoot Lake contributed 198,554 fish, of which 110,430 (56%) were harvested and 88,124 escaped to spawn. The Berners Bay/Chilkat Mainstem stock contribution included a harvest of 11,414 fish in District 115; these stocks were not enumerated for escapement. Exploitation rates within freshwater age generally increased with ocean age and longer fish were exploited at a greater rate for both Chilkoot Lake and Chilkat Lake stocks. Mean length of Chilkat Lake fish was greater than fish from Chilkoot Lake of the same sex and age. The mean date of harvest of the three runs was dissimilar; 20 July for Berners Bay/Chilkat Mainstem, 17 August for Chilkoot Lake, and 22 August for Chilkat Lake. The mean date of escapement was 7 August for the Chilkoot run and 16 September for Chilkat.

KEY WORDS: Scale pattern analysis, stock contributions, Chilkoot Lake, Chilkat Lake, Lynn Canal, sockeye salmon, total return, escapement, exploitation rate, mean length

INTRODUCTION

Stockley (1950) first documented the obvious differences in freshwater scale patterns of adult sockeye salmon from Chilkoot Lake and Chilkat Lake. Bergander (1973) collected scales from the fishery for use in determining system of origin and demonstrated in 1974 the feasibility of identifying fish from the respective lakes using circuli counts and size of the freshwater zone in a dichotomous key. During the 1981 season the catch sample design was improved and stock contributions were estimated using linear discriminant function (LDF) analysis to sort linear scale measurements on a mainframe computer (Marshall et al. 1982). During that and the 1982 season (McPherson et al. 1983) measurements from age 1.3 scale patterns provided an age specific model which, when coupled with age composition data, were used to estimate stock contributions with very high levels of precision. McPherson and Marshall (1986) demonstrated that visual classification of scale patterns could be used to classify all age classes of Chilkoot Lake and Chilkat Lake fish with similar or higher levels of precision and accuracy as seen with the age-specific LDF models. McPherson (1987a) and McPherson (1987b) used visual classification of freshwater age classes, independent of ocean age, to estimate catches of Chilkoot Lake and Chilkat Lake fish. Visual analysis of freshwater scale patterns has been proven to provide estimates of stock contribution of sockeye salmon stocks to the Lynn Canal (District 115) drift gill net fishery with a high degree of precision.

Estimation of the numbers of fish harvested by run is essential to sound management. Catches by stock coupled with escapement counts provide estimates of total return by brood year as well as rates of exploitation. Brood year returns can be used to evaluate optimum escapement requirements and to forecast interannual returns. Exploitation rates by stock, age class, and size provide managers with additional information by which to adjust time and area openings in order to achieve desired escapements. The temporal distribution of catches by stock and age is essential for calculating cumulative migratory time densities (Mundy 1979) which, when integrated with average timing data and historical cumulative time densities, form the basis for intraseason abundance forecasting. Comparison of the temporal distribution of age composition in catches and escapements can be used to calculate lag time, reconstruct the run distribution temporally, and to predict escapement in absence of timely weir counts.

The Lynn Canal (District 115) drift gill net fishery operates in those waters of Southeastern Alaska north of Little Island (Figure 1). While all five species of eastern Pacific salmon (*Oncorhynchus*) are harvested, the fleet targets on sockeye salmon (*O. nerka*) from June through early September. Sockeye salmon harvested in Lynn Canal originate primarily from the Chilkoot Lake and Chilkat Lake drainages, but small spawning populations which utilize river habitat are found in several locations along the mainstem of the Chilkat River and along three rivers in Berners Bay: the Lace, the Gilkey, and the Berners. In order to accurately calculate other population attributes, each of the two lake runs must be classified separately from the river group in catches.

The purposes of this report are: (1) document the accuracy and precision of visually classifying the three sockeye salmon stocks of origin (Chilkoot

Lake, Chilkat Lake, and a combination of Berners Bay and Chilkat River mainstem) in the Lynn Canal fishery by a blind testing procedure; (2) present the catch of each stock by week in the Lynn Canal fishery; (3) develop total run estimates for future use in evaluation of escapement goals and for forecasting escapements and catches by stock; (4) present average length data by age and stock; and (5) provide estimates of migratory timing and exploitation rates for each run.

METHODS

Numbers of Fish

Commercial catch data for District 115 is compiled from individual receipts given to fishermen by buyers at the time of delivery. Catch statistics used were those available on 10 March 1987. Subsequent catch tabulations may differ slightly from those presented as errors are detected and corrected. Catches are reported by fishing period and assigned to a statistical week. A statistical week, used to report catch figures in Alaska, begins at 0000 hours each Sunday and ends the following Saturday at 24000 hours. Weeks are numbered sequentially beginning with the week encompassing the first Sunday in January.

Weir crews count escapements into Chilkoot Lake and Chilkat Lake (Figure 1). The Chilkoot River weir, located approximately 0.8 kilometers upstream of the river mouth, was operated from 6 June through 29 October. Chilkat Lake weir, located at the lake's outlet approximately 35 kilometers upstream from the mouth of Chilkat River, was operated from 18 June through 14 November.

Age, Sex, and Length

Commercial catches and escapements at the two weirs are sampled throughout the season for scale, sex, and length data. Alaska Department of Fish and Game (ADF&G) employees sample scales from vessel and tender landings in the ports of Excursion Inlet, Sitka, Petersburg, Juneau, and Pelican in proportion to the magnitude of deliveries. The weekly catch sampling goal is designed to collect sufficient samples to estimate the proportion of each age class of the most abundant stock to within 5 percentage points 90% of the time using standard binomial formulae in Cochran (1977). The goal of 1000 fish per week was not realized during the first seven weeks of the season when catches were low, but was exceeded during the next five weeks when the majority of the season's harvest occurred. Catches after 17 September represented less than 1% of the season total and were not sampled. The age composition observed for the 14 to 17 September period is used to represent the age composition of these catches. Dipnets are used to capture fish as they pass through the Chilkoot Lake weir, while beach seining and traps are used at the Chilkat Lake weir site. The escapement sampling goal at the weirs is to collect sufficient samples to estimate the proportion of each age biweekly to within 5 percentage points 9 out of 10 times. Sampling from the Chilkoot Weir was generally good, but extremely low water conditions and low counts for most of the season hampered sampling at the Chilkat weir, resulting in poor sample sizes until late September. Samples are taken from the spawning grounds on the Lace River (Berners Bay) and along the mainstem

of the Chilkat River in locations where sockeye salmon were concentrated in clear tributaries. These samples are time and area limited and may not be representative of the entire Berners Bay/Chilkat Mainstem population.

Scales were obtained from either side of the fish as shown in Mosher et al. (1961). The 'preferred scale' is in the second scale row above the lateral line in the diagonal scale row downward from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin. If the preferred scale is missing, we select a scale as close as possible to the preferred position, but not further than 10 scales to the right or left or 3 rows above. If a scale is unavailable within these bounds, we disregard the fish. Scales were mounted on gummed cards, and impressions made in cellulose acetate (Clutter and Whitesel 1956). Age is determined by visual examination of scale impressions magnified 70x on a microfiche reader; criteria used to determine age followed those of Mosher (1968). Length frequency analysis is used to determine ages on scales from escapement collections that exhibit a high degree of resorption of the marine growth zone. Ages are reported in European notation. Length is measured from mid-eye to fork-of-tail to the nearest 5 millimeters. Sex is determined by examination of external dimorphic sexual maturation characteristics, including kipe development, belly shape, trunk depth, and jaw shape. Sex determination is most often made by two samplers and where disagreement occurred, sex is verified by inspecting gonads through a small incision in the belly.

Estimates of the total catch or escapement of each age class is made by applying period age composition data to the number of fish during those time periods and summing the estimates across time periods. Standard errors of the proportions in each stratum are calculated by standard binomial formulae:

$$SE_{ij} = \sqrt{\frac{P_{ij}(1 - P_{ij})}{n_j - 1}}$$

where: i = age class,
j = time period,
P_{ij} = proportion of fish of age i in stratum j, and
n_j = sample size for stratum j.

The standard error for each age class summed across strata in the total commercial catch in Lynn Canal or the escapements to Chilkoot Lake or Chilkat Lake is calculated by weighting its standard error for each sample period by the total catch (or escapement) during the sample period as follows:

$$SE_{(\text{Total Age}_i)} = \sqrt{\frac{\sum_{1}^{J}((SE_{ij})^2 * C_j^2)}{\sum_{1}^{J} C_j^2}}$$

where: C_j = catch or escapement of fish in stratum j.

Average lengths by age and sex and associated standard errors is calculated for catches and escapements from each run.

Blind Tests

Scale samples collected each week from District 115 are classified to stock or origin to provide timely estimates of stock contribution for in-season management purposes. Time and area adjustments are made in the fishery based on the comparison of the current year's cumulative catches and escapements of each stock to the historical average in order to gauge run strength and achieve the escapement goals of 70,000 $\pm$ 10,000 for Chilkoot Lake and 80,000 $\pm$ 10,000 for Chilkat Lake. Catch statistics are updated and the estimated stock proportions are corrected for misclassification as part of this report in order to add precise and accurate estimates of the current year's data to the historic Lynn Canal sockeye salmon stock identification data base. In order to test the accuracy of the in-season allocation and to correct for misclassification between stocks, a blind testing procedure is used.

A previous study (McPherson and Marshall 1986) indicated that sufficient differences exist in freshwater scale patterns of Chilkat Lake and Chilkoot Lake stocks to identify the origin of catches by visual inspection of scale samples at relatively low magnification. In 1985, a third stock (fish from Berners Bay and the mainstem of the Chilkat River) was added to the stock classification system because these fish were relatively abundant in early season catches (McPherson 1987b). Results of the blind tests for the 1985 data revealed that a high degree of precision was maintained in stock allocation estimates using a 3-stock model. In 1986, fish from Berners Bay/Chilkat Mainstem were again present in relatively high numbers in early season catches. Escapement scales were collected from these fish to develop a blind testing procedure for three stocks.

A separate test was designed for each freshwater age class common to two or more stocks. To construct each test, a technician selected scales from each of the three escapements according to numbers specified by a random number list generated by a computer. The computer was directed to include in each test the approximate proportions of each stock that are estimated in the in-season analysis. For example, during the first four weeks of the season approximately 43% of the fish aged 1. in Lynn Canal catches were estimated to be of Berners Bay/Chilkat Mainstem origin and consequently, 43% of the first test for fish aged 1. were directed to be randomly selected from those escapement samples. After selection and remounting was completed for each test, I then visually classified the scales to stock of origin. The technician compared my classification of origin to the true origin for each scale which defined the accuracy of the method.

Four blind tests were developed: (1) fish aged 1. for weeks 25 - 28 (98 scales); (2) fish aged 1. for weeks 29 - 42 (100 scales); (3) fish aged 2. for all weeks (97 scales); and (4) fished aged 3. for all weeks (18 scales). The tests for fish aged 1. and 2. included escapement scales from all three stock groups; the test for fish aged 3. was comprised only of Chilkoot and Chilkat Lake scales. Fish aged 0. were found only in escapements to Berners Bay/Chilkat Mainstem, subsequently, a blind test was not needed for these fish.

While size of the freshwater growth zone was the principal scale characteristic we used to distinguish between runs, others considered were: (1) the size of the freshwater annuli; (2) the number of circuli in the freshwater annuli; (3) size of the focal plate; (4) completeness of the freshwater circuli, and (5) the spacing between the circuli in the freshwater growth zone.

Mixed Stock Analysis

The results of the blind tests were used to build a correction matrix to compensate for misclassifications in each test. The correction matrix is a square matrix with one column and one row for each group. The element in the ith row jth column of the matrix is the fraction of scales in group j that were classified as being from group i through the visual classification procedure. Diagonal elements in the matrix represent correctly classified scales, while off-diagonal elements represent misclassified scales.

The proportional estimates of stock composition from the in-season analysis, referred to as initial estimates, are adjusted by application of a model and its correction matrix (Cook and Lord 1978). A vector containing adjusted proportions, referred to as corrected estimates, is the result. One vector of corrected estimates is calculated for each stock in each freshwater age class for every fishing period of the season using a FORTRAN source code written by Larry Talley (ADF&G, Commercial Fisheries Division, Douglas). In cases where corrected proportions for any stock were less than zero, the entire catch sample was reclassified with a model excluding that stock group.

The standard error of the corrected estimates of stock proportions were computed using the procedures of Pella and Robertson (1979). The variance-covariance matrices for the misclassification matrix and for the mixed stock proportion vector are determined from the multinomial probability distribution. These two variance-covariance matrices are combined to give variances and covariances for the corrected estimates of stock proportions. The variances for the proportions of each stock are the diagonal elements of this combined matrix, i.e., they are an additive combination of: 1) the sampling variation in estimation of the probability of assignment of the known stock and 2) the sampling variation in estimation of the assignment of the mixed stock samples.

Catch samples are classified to stock and freshwater age within statistical week, corrected for misclassification, and expanded to the catch size of that week.

The variance of the entire weekly and seasonal allocation to one stock, across the four freshwater age classes, was estimated with the delta method (Seber 1982) using a source code written by David Bernard (ADF&G, Sport Fish Division, Anchorage) and modified by the senior author. The variance estimate is a function of: 1) freshwater age composition of the catch, 2) stock proportions within freshwater age class, 3) standard errors of stock proportions due to misclassification, 4) weekly scale sample size, and 5) catch size.

Mean Dates of Migration

Migratory timing (abundance as a function of time) is the driving force behind management strategies which regulate time and area openings to selectively harvest the target stock or species. Migratory timing statistics for the harvest of all three stocks and the weired escapements are presented to provide an index of relative timing following methodology of Mundy (1979; 1982).

To calculate mean and variance, the empirical migratory time density is defined to be the time series of daily proportions, P_t, where:

$$P_t = n_t/N$$

where: n_t = abundance on time interval t and

N = total annual abundance.

For a migration over a time interval of m days, the mean of t is estimated:

$$\hat{t} = \sum_{t=1}^{m} t \quad P_t$$

and its variance is estimated:

$$\hat{S}_t = \sum_{t=1}^{m} (t - \bar{t})^2 \quad P_t$$

The central day (mean) of weired escapements is presented as weir counts are stratified by day, whereas in the catches, the central week (mean statistical week) is presented as catches are reported by week. Catch rather than CPUE is used as the index of abundance because exploitation was greater than 70% for the Chilkat Lake stock, catchability is variable in the Lynn Canal drift gill net fishery, and CPUE is not accurate under our present reporting system. Run timing of the catch is influenced in part by management decisions.

RESULTS

Blind Tests

McPherson et al. (1983) showed large and consistent differences in the number of circuli for fish aged 1.3 between Chilkoot (mean of 6.0, SD of 1.6) and Chilkat (mean 13.1, SD 2.2) Lakes for samples collected from 1976 through 1982. Similarly, the size of the freshwater zone was smaller for Chilkoot River fish (mean 54.6 SD 13.4) than Chilkat River fish (mean 149.0 SD 24.0). The relative size of a the freshwater zone makes it possible to distinguish stocks by each age class with the naked eye (Figures 2 and 3).

Results of the four blind tests used for determining the accuracy of our visual classification of fish from the Chilkoot, Chilkat, and Berners

Bay/Chilkat Mainstem systems are summarized in Table 1. Overall accuracy was high in all tests and ranged from 92.9% (fish aged 1. for 15 June 15 - 12 July) to 100% (fish aged 2. and 3.). In the first period test for fish with one freshwater annulus, 17% of the Chilkoot Lake and 4% of the Chilkat Lake samples misclassified as being from Berners Bay/Chilkat Mainstem, and 2% of the Berners Bay/Chilkat Mainstem samples misclassified to Chilkoot Lake. In the second test for fish aged 1., 14% of the Chilkat Lake fish were misclassified as being from Berners Bay/Chilkat Mainstem. In the tests for fish with two and three freshwater annuli accuracy was perfect (100%).

The corrected stock proportions are compared to the in-season estimates in Table 2. The corrected proportions were similar to the initial estimates. Weekly differences ranged from 0.001 to 0.072 for Chilkoot Lake, from no change to 0.033 for Chilkat Lake and from no change to 0.072 for Berners Bay/Chilkat Mainstem.

Harvest

Annual harvests in District 115 have ranged between 18,388 and 369,311 sockeye salmon from 1960 to 1984, with an average annual harvest of 134,631 fish. Annual harvests during the most recent five years (1981 - 1985) have averaged 220,230 fish. The 1986 harvest of 290,205 is the fourth-highest harvest since 1960. The catch of 84,191 fish during statistical week 34 (17 - 13 August) in 1986 was the highest weekly catch ever recorded in the district.

The harvest of sockeye salmon in Lynn Canal occurred over a 17-week period (Table 2). Management strategies to selectively harvest or protect stocks of sockeye (*Oncorhynchus nerka*), chinook (*O. tshawytscha*), coho (*O. kisutch*), pink (*O. gorbuscha*), or chum (*O. keta*) salmon resulted in considerable variation in the time and areas open to fishing each week.

Fish aged 2.3 dominated the catch (39.7%) followed by fish aged 1.3 (35.7%), 2.2 (17.9%), 1.2 (3.6%), and 0.3 (1.8%). Fish of all other age classes accounted for approximately 1% of the catch (see Appendix Table 1). Temporal trends in age composition of the catch were evident (Figure 4). The percentage of fish aged 1.3 and 0.3 decreased through the season while those aged 2.3 and 2.2 increased.

The harvest of 290,205 sockeye salmon was estimated to be comprised of 110,430 Chilkoot Lake fish, 168,361 Chilkat Lake fish, and 11,414 fish from Berners Bay/Chilkat Mainstem (Appendix Table 2). Fish of both Chilkoot and Chilkat Lake runs were caught in each fishing period during the 17-week season (Figure 5). Fish from Berners Bay/Chilkat Mainstem were present in appreciable numbers only during the first four weeks of the season; catches of these fish occurred primarily in Sections 15-B and 15-C.

The harvest of Chilkoot Lake fish was primarily fish aged 1.3 (77.9%), 2.3 (13.8%), and 1.2 (6.3%) (Appendix Table 3). The relative abundance of all age classes changed little throughout the season, however age class 2.3 fish increased slightly as the season progressed while fish aged 1.2 decreased slightly (see Figure 6C). A majority (54%) of the harvest was males.

The catch of Chilkat Lake fish was dominated by fish aged 2.3 (59.3%), 2.2 (30.1%), and 1.3 (7.7%) (Appendix Table 4). Fish of all other age classes combined accounted for approximately 3% of the catch. Early in the run, (Figure 6B) age 1.3 fish dominated most catches and accounted for 33.1% to 65.0% of the harvest. The percent of fish aged 1.3 dropped sharply to 19.8% of the catch during week 32 (3 - 9 August) and continued to decrease steadily to approximately 1% of harvest in the last three sampling periods. The relative abundance of fish aged 2.3 and 2.2 increased as the season progressed, accounting for the majority of the catch after 27 July. Females were slightly more abundant than males in the harvest.

The harvest of Berners Bay/Chilkat Mainstem was comprised principally of two age classes: 0.3 (44.8%) and 1.3 (39.8%) (Appendix Table 5). Fish aged 0.3 comprised a greater proportion of catches during the first six weeks of the season, after which age 1.3 fish were generally most abundant (Figure 6A). Fish of this stock group were extremely rare after statistical week 34 (17 - 23 August). A majority (56%) of the harvest were males.

Escapement

Annual escapements for the period 1976 to 1985 have averaged 83,218 sockeye salmon to Chilkoot Lake and 82,543 to Chilkat Lake. The escapement in 1986 of 88,024 to Chilkoot Lake was above average, while that to Chilkat Lake (23,947 fish) was the lowest on record.

The estimated escapement into Chilkat Lake was 23,947 sockeye salmon. The weir was operated from 18 June through 14 November (see Appendix Table 6). More than 94% of the escapement past the weir occurred from 21 August through mid-October (Figure 7).

The estimated escapement into Chilkoot Lake was 88,024 fish. The weir was operated from 6 June through 29 October (see Appendix Table 7). The escapement was slightly less dispersed than the Chilkat Lake escapement (variance = 272 versus 283). Approximately 57% of the escapement occurred from 29 July to 19 August. A weakly defined mode occurred on 7 July and a stronger mode occurred on 9 August (Figure 7).

The Chilkat Lake escapement was dominated by fish with two freshwater annuli (88.1%), contributed by fish aged 2.1 (1.0%), 2.2 (24.9%), and 2.3 (62.2%) (see Appendix Table 8 and note small or lacking sample sizes early in the season). Fish aged 1.2 and 1.3 accounted for 6.2% and 3.5% of the escapement, respectively, and fish aged 3. contributed 2.1% of the escapement. The proportion of age 1.3 fish in 1986 is the smallest observed for all years from 1981 through 1985. Period estimates of age composition show that fish aged 1.2 and 1.3 decreased in relative abundance through the season and those aged 2.2 and 2.3 increased (Figure 8A). Males comprised 59% of the escapement. This preponderance of males was seen across most age classes except ages 2.2 and 3.2 where approximately equal numbers of each sex were observed.

In the Chilkoot Lake escapement, fish aged 1.3 (67.2%) dominated samples, while fish aged 2.3 (16.7%) and 1.2 (12.9%) were common (see Appendix Table 9). Trends through time in the age composition of the escapement (Figure 8B) show that fish aged 1.3 and 2.3 increased slightly in relative abundance,

while age class 1.2 fish decreased as the season progressed. Sex composition data reveals that males were much more abundant (61%). This trend was evident across all time periods and age classes. The same dominance of males was observed in the 1985 data. This dominance was especially evident among fish aged 1.2 where males were more abundant by a 7.7:1 ratio which compares to a 12.4:1 ratio in 1985, and contrasts to previous studies in 1981, 1982, 1983, and 1984 where this same ratio was 1:1, 0.9:1, 1.8:1, and 5:1, respectively.

Limited samples collected from the mainstem Chilkat River on 9 October indicate that a majority (76.3%) of ocean-age-.3 fish were present while fish with no freshwater annulus (aged 0.) dominated (56.1%) freshwater age groups (Appendix Table 10). Fish aged 0.3 (49.1%) and 1.3 (26.3%) were most abundant, followed by fish aged 1.2 (14.9%). Males were more abundant (59%) than females in these samples.

Samples collected from the Lace River in Berners Bay on 23 and 24 August were dominated by fish aged 1. (60.8%) and 0. (38.0%) (Appendix Table 11). Ocean-age-.3 fish (82.5%) were the dominant ocean-age, while ocean-age-.2 fish were common (15.3%). Among individual age classes, fish aged 1.3 were most abundant (46.0%) followed by fish age 0.3 (35.4%) and 1.2 (12.7%).

Exploitation Rates

The total run of sockeye salmon from Chilkoot Lake was 198,554 fish of which 110,430 were caught and 88,124 escaped to spawn (Table 3). The exploitation rate for this run was 56%. The total run of Chilkat Lake sockeye salmon was 192,308 of which 168,361 were harvested and 23,947 escaped to spawn. The exploitation rate for this run was 88%.

Exploitation rates for Chilkoot and Chilkat Lake sockeye salmon tended to increase directly with ocean-age regardless of stock (Table 3). No exploitation was seen in ocean-age-.1 fish. Among ocean-age-.2 fish, 38% of the Chilkoot Lake fish and 87% of the Chilkat fish were caught, while among ocean-age-.3 fish 58% of the Chilkoot Lake fish and 88% of the Chilkat Lake fish were harvested. Ocean-age-.4 fish from Chilkoot Lake were exploited at 55%; fish from this ocean age were rare from Chilkat Lake.

Size at Age by Sex and Stock

The mean lengths of Chilkat Lake sockeye were longer than those of Chilkoot Lake and Berners Bay/Chilkat Mainstem fish from same age group and sex (Table 4). In the District 115 catch, Chilkat Lake fish were larger in length than both Chilkoot Lake fish and Berners Bay/Chilkat Mainstem fish, which were of similar size. Differences were greater among 2 and 3-ocean- age fish with the greatest average difference in age-2.2 fish; Chilkat Lake fish were 67 mm longer than Chilkoot Lake fish. Among ocean-age-.3 fish those aged 2.3 from Chilkat Lake were an average 24 mm longer than Chilkoot Lake fish. In all three stocks, average length increased with ocean age.

Chilkoot Lake fish of ocean-age-.3 sampled from catches and escapements were similar in size (Table 4). However, ocean-age-.2 fish samples from the catches were longer than those sampled from the escapement. The average difference in mean lengths was greatest among fish aged 1.2 (32 mm). Within the catch samples, males were larger in all age classes. This was also true

among escapement samples with the exception of ocean-age-.2 fish, ages 1.2 and 2.2, where females were longer than their male counterparts by 21 mm and 34 mm, respectively.

On the average, Chilkat Lake fish of ocean-age-.3 sampled from escapements were longer in length than those sampled from catches with the greatest average difference among fish aged 1.3 (14 mm) (Table 4). Fish of ocean-age-.2, on the other hand, were generally longer in catch samples; fish aged 1.2 and 2.2 were 46 mm and 16 mm smaller, respectively. Males in both catches and escapements exhibited longer mean lengths across all age classes except among fish aged 1.2 where females were an average of 3 mm longer in catches and 48 mm longer in escapements.

The average length data for Berners Bay/Chilkat Mainstem is not adequate to make comparisons between average lengths in catches and escapements as only a portion of the spawning grounds were sampled and may not be representative of the entire spawning population. However, the average length of the samples do indicate a general trend in all age classes, particularly among ocean-age-.2 fish where fish in the escapement were smaller than those in the catch.

The temporal distribution of the average length of catch samples from each stock is presented in Appendix Tables 12 to 14. Fish aged 1.3 and 2.3 from Chilkoot Lake and Chilkat Lake increased by an average of 15 to 30 mm during the season. Fish of all other age groups showed no apparent trends.

The temporal distribution of length data in escapements was presented by McPherson and McGregor (1987). Length data from Chilkat Lake indicated no obvious trends over time. Length samples from the Chilkoot Lake escapement indicated that fish aged 1.3 and 2.3 increased 25 to 30 mm as the season progressed and that fish of other age classes showed no apparent trends.

Mean Dates of Migration

This section summarizes the mean dates of harvest and escapement by age and stock group. Significant differences in average migratory timing were evident in both inter- and intra-stock comparisons.

Catch:

The mean date of the harvest of Berners Bay/Chilkat Mainstem fish was earliest (20 July), followed by Chilkoot Lake (17 August), and Chilkat Lake (22 August) (Table 5).

Little difference was found among the mean dates of harvest of the principal age classes in the Chilkoot Lake run, although younger fish were harvested slightly earlier. Fish aged 1.2, 1.3, and 2.3 exhibited mean dates of harvest of 12 August, 18 August, and 19 August, respectively (Table 5). The central 50% of the return was harvested during the period 10 - 30 August. Age class 1.2 fish exhibited the most dispersed harvest as indicated by a standard error (se) of 2.3 weeks, while fish aged 2.3 were the least dispersed (se = 1.8 weeks).

In contrast to the Chilkoot Lake return, the mean dates of harvest for the major age classes in the Chilkat Lake return were dissimilar. Fish of

freshwater-age-1. were harvested much earlier than those aged 2. Fish aged 1.2 and 1.3 exhibited mean harvest dates of 5 and 6 August, respectively, while those for fish aged 2.3 and 2.2 were 23 and 26 August, respectively (Table 5). The central 50% of the return was harvested during the period 10 August to 6 September. The harvest of age 1.2 fish was the most dispersed (se = 2.9 weeks) and that of fish aged 2.2 the least (se = 1.6 weeks).

Most fish from Berners Bay/Chilkat Mainstem were harvested early in the season as was indicated by mean dates of harvest for fish aged 0.3 (18 July) and 1.3 (22 July).

Escapement:

The mean dates of escapement (MDE) for Chilkoot Lake and Chilkat Lake compared to trends seen in the catch. All major age classes in the Chilkoot Lake return exhibited similar dates of arrival, however, fish aged 1.2 (MDE = 31 July) arrived slightly more than one week earlier than those aged 1.3 (MDE = August) and 2.3 (MDE = 7 August) (Table 5). The escapement of fish aged 2.3 was the most dispersed and that of age class- 1.2 the least. The Chilkat Lake mean dates of escapement and associated statistics are based on small sample sizes in many strata. Available data indicate that the escapement of fish aged 1.2 was earliest, followed by fish aged 1.3, 2.2, and 2.3.

DISCUSSION

The visual freshwater classification technique used to allocate stock groups in Lynn Canal is successful for several reasons. First, all freshwater age groups were included. All fish were classified to one of three stocks around which a complete measure of confidence could be calculated. Second, high overall classification accuracies in all test matrices indicate that initial point estimates used for in-season management purposes were similar to the post-season estimates. Additionally, separation of the Berners Bay/Chilkat Mainstem stock from Chilkat Lake improved the stock contribution estimates and corresponding exploitation rate estimates. Finally, the technique is very cost effective and requires less time when compared to stock classification methods that rely on linear or pattern measurements generated from computer hardware and software.

Only scales collected in 1986 were used in the analyses. The results indicate that differences in scale patterns are persistent from year to year as evidenced by the high accuracy of all correction matrices. Inclusion of in-season catch proportions in the blind tests results in an overall classification accuracy that closely represents conditions within the catch.

The calculation of exploitation rates by run provides the opportunity to evaluate the success of management decisions aimed at selectively harvesting one or both runs (Chilkoot and Chilkat Lakes) while achieving preset escapement goals. In 1986, Chilkoot and Chilkat Lake sockeye salmon were exploited at dissimilar rates, 56% and 88%, respectively (Table 4). The escapement at Chilkoot Lake was 10% above the upper range of the desired escapement goal while that at Chilkat Lake was only 34% of the desired lower range. Fishery openings by time and area in 1986 were similar to those in 1985 when both runs were harvested at approximately 70%. During the 1986

season, information was not available to indicate whether the high catches of Chilkat fish were due to a longer-than-average residence in the fishery or to an extremely strong return (pers. comm. Ray Staska, ADF&G, Haines). Weekly management decisions are based in part on escapement counts to date. Escapement to Chilkoot Lake occurs less than one week removed from the fishery while escapement to Chilkat Lake is approximately four weeks removed from the fishery. Consequently, the results of management decisions can be evaluated at Chilkoot Lake prior to the subsequent week's opening. However, at Chilkat Lake up to four weeks of openings and closures can occur. An improved method of estimating the Chilkat Lake escapement on a timely basis is needed to avoid future deviations from the desired escapement goal.

Estimation of the mean dates of arrival in the harvest is a first step toward catagorizing runs of Lynn Canal sockeye salmon into early, late, and average runs with respect to migratory timing. This technique was used by Mundy (1982) for Yukon River chinook salmon. The 1986 mean dates of harvest (MDH) indicate that the Chilkat Lake run arrived later (by five days) than the Chilkoot Lake run. This was similar to trends in 1983, 1984, and 1985 when the differences were 3, 4 and 6 days later, respectively. Interannual comparisons of MDH data indicate that the 1986 harvest of both runs was later than in the three previous years. The 1986 MDH of 17 August in the Chilkoot Lake run compares to previous years: 7 August 1983, 31 July 1984, and 12 August 1985. Similarly, the MDH in 1986 of 22 August for Chilkat Lake was later than the MDH's of 10 August, 4 August, and 18 August for the respective 1983, 1984, and 1985 migrations.

The use of cumulative migratory time densities (Mundy 1979) to describe average migratory timing is advantageous because the influence of large interannual fluctuations in abundance are removed. When these estimates are summed across years to calculate an average density, each year is weighted equally. An average probability of catch in each time interval is used to forecast abundance by stock on an in-season basis.

Lynn Canal sockeye salmon catches have been precisely classified by stock (Chilkoot and Chilkat Lakes) and age since 1981, affording a unique stratification of migratory time densities. Forecasting by stock is desirable as separate escapement goals are set for each lake. The Chilkoot Lake MDH for all principal age classes was similar to 1983 to 1985. Within this stock, stratification by age may not reduce variability in forecasting. The significant difference ($p < 0.0001$) in migratory timing between freshwater age classes of the (Table 5) Chilkat Lake run suggests that it would be appropriate to divide that sockeye population into two components. Also, if two discrete temporal components exist, separate strategies for setting and achieving escapement goals need to be evaluated. The presence of discrete timing for age classes within the Chilkat Lake run has fishery management implications.

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LITERATURE CITED

ADF&G (Alaska Department of Fish and Game). 1987. Report to the Board of Fisheries - 1986 Southeast Alaska salmon net fisheries. Unpublished report of Alaska Department of Fish and Game, Division of Commercial Fisheries, Douglas.

Bergander, F. 1973. Southeastern Alaska sockeye salmon optimum escapement studies. Anadromous Fish Conservation Act. Completion Report for the 1972 field season, AFC-40. Alaska Department of Fish and Game, Division of Commercial Fisheries, Douglas.

Bergander, F. 1974. Southeastern Alaska sockeye salmon optimum escapement studies. Anadromous Fish Conservation Act. Completion Report for period July 1, 1971 - June 30, 1974. AFC-40. Alaska Department of Fish and Game, Division of Commercial Fisheries, Douglas.

Clutter, R. and L. Whitesel. 1956. Collection and interpretation of sockeye salmon scales. Bulletin International Pacific Salmon Fisheries Commission, No. 9.

Cochran, W. 1977. Sampling Techniques. 3rd edition. John Wiley & Sons, Inc. New York.

Cook, R. and G. Lord. 1978. Identification of stocks of Bristol Bay sockeye salmon by evaluating scale patterns with a polynomial discriminant method. U.S. Fish and Wildlife Service, Fishery Bulletin 76(2): 415-423.

Marshall, S., F. Bergander, and S. Sharr. 1982. Origins of sockeye salmon in the Lynn Canal drift gillnet fishery of 1981 based on scale pattern analysis. Alaska Department of Fish and Game, Division of Commercial Fisheries Technical Data Report 75, Juneau.

McPherson, S. 1987a. Contribution, exploitation, and migratory timing of Chilkat & Chilkoot River runs of sockeye salmon (*Oncorhynchus nerka* Walbaum) in the Lynn Canal drift gillnet fishery of 1984. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Data Report No. 198, Juneau.

McPherson, S. 1987b. Contribution, exploitation, and migratory timing of sockeye salmon (*Oncorhynchus nerka* Walbaum) stocks to Lynn Canal in 1985 in 1985 based on analysis of scale patterns. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Data Report 217, Juneau.

McPherson, S., A. McGregor, and S. Marshall. 1983. Origins of sockeye salmon (*Oncorhynchus nerka* Walbaum) in the Lynn Canal drift gillnet fishery of 1982 based on scale pattern analysis. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Data Report 87, Juneau.

LITERATURE CITED (Continued)

McPherson, S., and S. Marshall. 1986. Contribution, exploitation, and migratory timing of Chilkat & Chilkoot River runs of sockeye salmon (*Oncorhynchus nerka* Walbaum) in the Lynn Canal drift gillnet fishery of 1983. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Data Report 165, Juneau.

McPherson, S., and A. McGregor. 1987. Abundance, age, sex, and size of sockeye salmon (*Oncorhynchus nerka* Walbaum) catches and escapements in Southeastern Alaska in 1986. Final Report - 1986 salmon research conducted in Southeastern Alaska by the Alaska Department of Fish and Game in conjunction with the National Marine Fisheries Service Auke Bay Laboratory for joint U.S. - Canada interception studies. Juneau.

Mosher, K. 1968. Photographic atlas of sockeye salmon scales. U.S. Fish and Wildlife Service, Fishery Bulletin 67:243-280.

Mosher, K., R.E. Anas, and K.L. Liscom. 1961. Study on scales. In Report on the investigations by the United States for the International North Pacific Fisheries Commission - 1961. International North Pacific Fisheries Commission, Annual Report 1960: 88-95.

Mundy, P.R. 1979. A quantitative measure of migratory timing illustrated by application to the management of commercial salmon fisheries. Doctoral dissertation, University of Washington, Seattle.

Mundy, P.R. 1982. Computation of migratory timing statistics for adult chinook salmon in the Yukon River, Alaska, and their relevance to fisheries management. North American Journal of Fisheries Management 2:359-370.

Oliver, G., S. Marshall, D. Bernard, S. McPherson, and S. Walls. Estimated contribution from Alaskan and Canada stocks to the catches of sockeye salmon (*Oncorhynchus nerka*) in southern Southeastern Alaska, 1982 and 1983 based on scale pattern analysis. Alaska Department of Fish and Game, Division of Commercial Fisheries Technical Data Report 137, Juneau.

Pella, J. and T. Robertson. 1979. Assessment of composition of stock mixtures. Fishery Bulletin 77(2): 387-389.

Seber, G. 1982. The estimation of animal abundance and related parameters. Charles Griffin & Co. Ltd., London.

Stockley, C. 1950. The sockeye salmon of Chilkat and Chilkoot Inlets. Fisheries Research Institute Paper No. 286, University of Washington, Seattle.

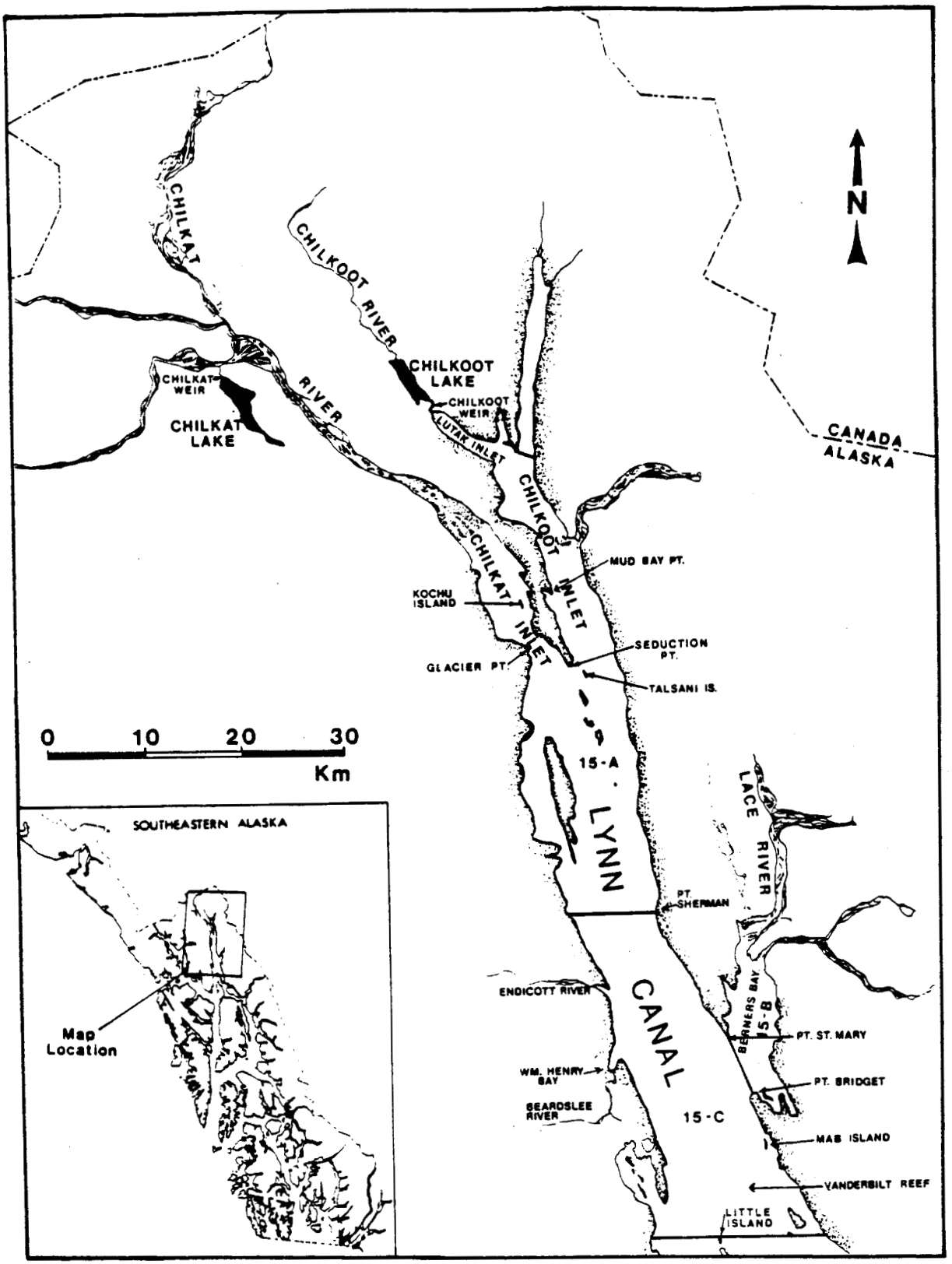

Figure 1. Map of Lynn Canal showing the fishing district and sections (e.g., 15-C) and principal spawning and rearing areas.

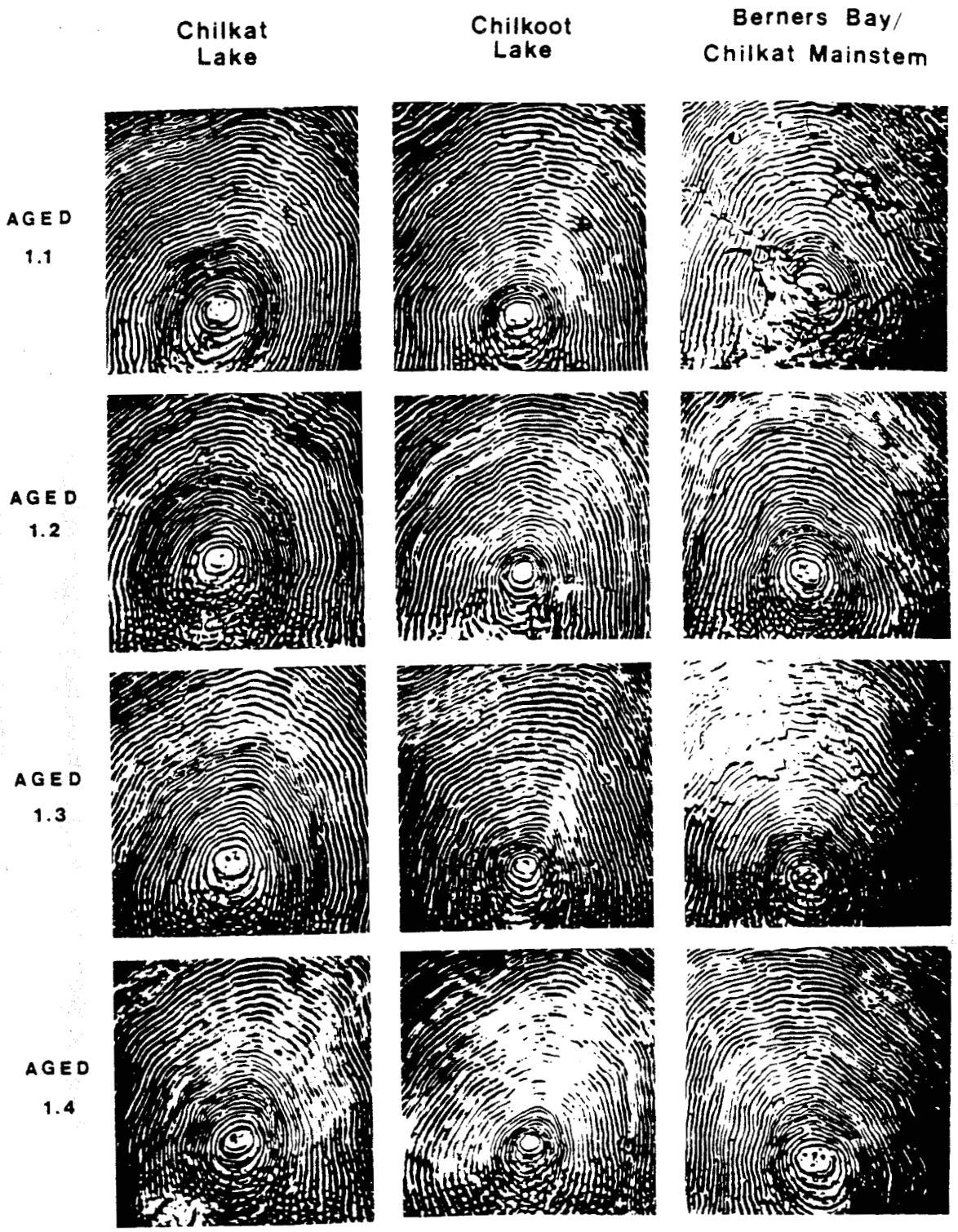

Figure 2. Photographs which illustrate typical scale patterns of sockeye salmon with one freshwater annulus from Chilkoot Lake, Chilkat Lake, and Berners Bay/Chilkat Mainstem stocks.

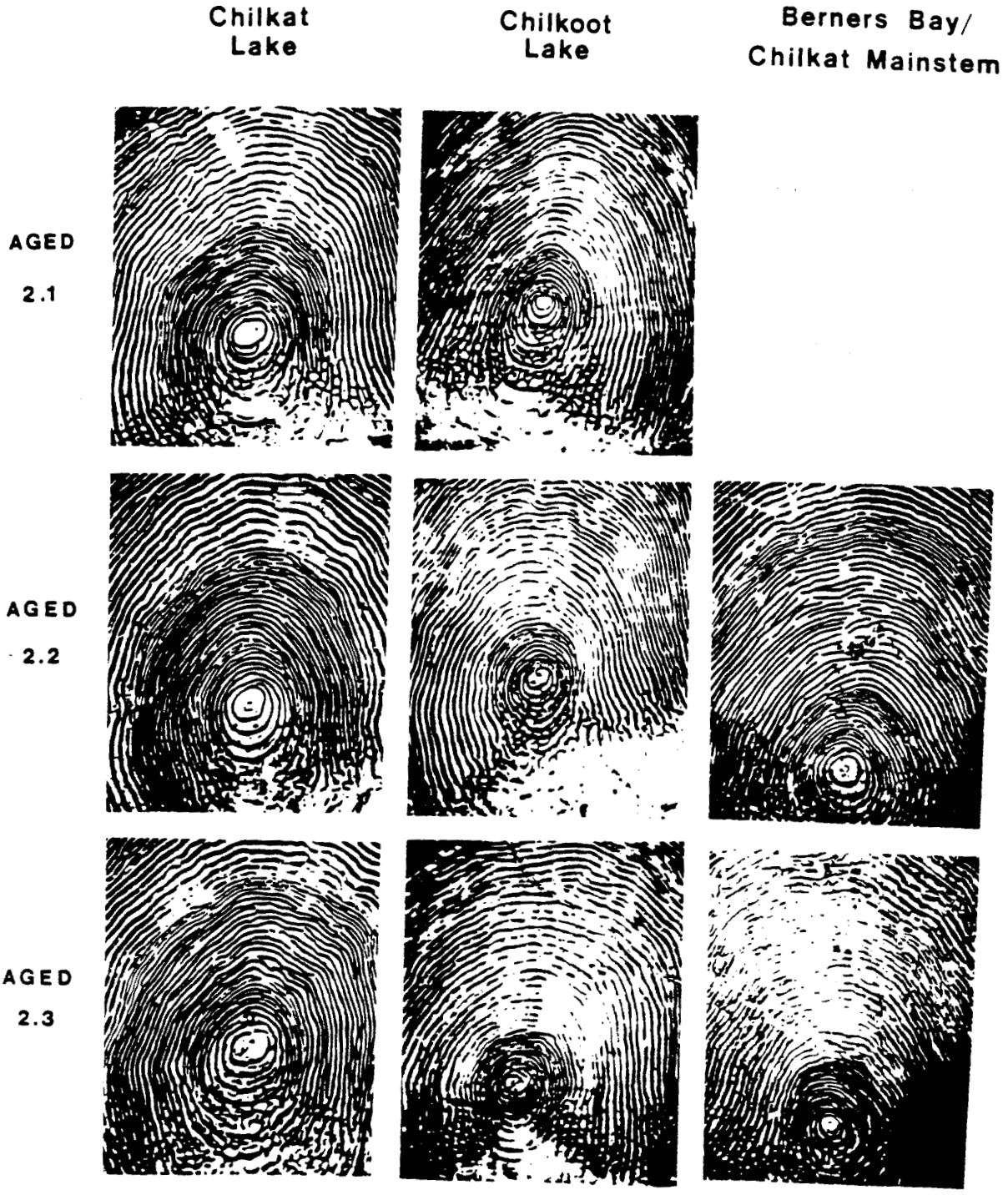

Figure 3. Photographs which illustrate typical scale patterns of sockeye salmon with two freshwater annuli from Chilkoot Lake, Chilkat Lake, and Berners Bay/Chilkat Mainstem stocks.

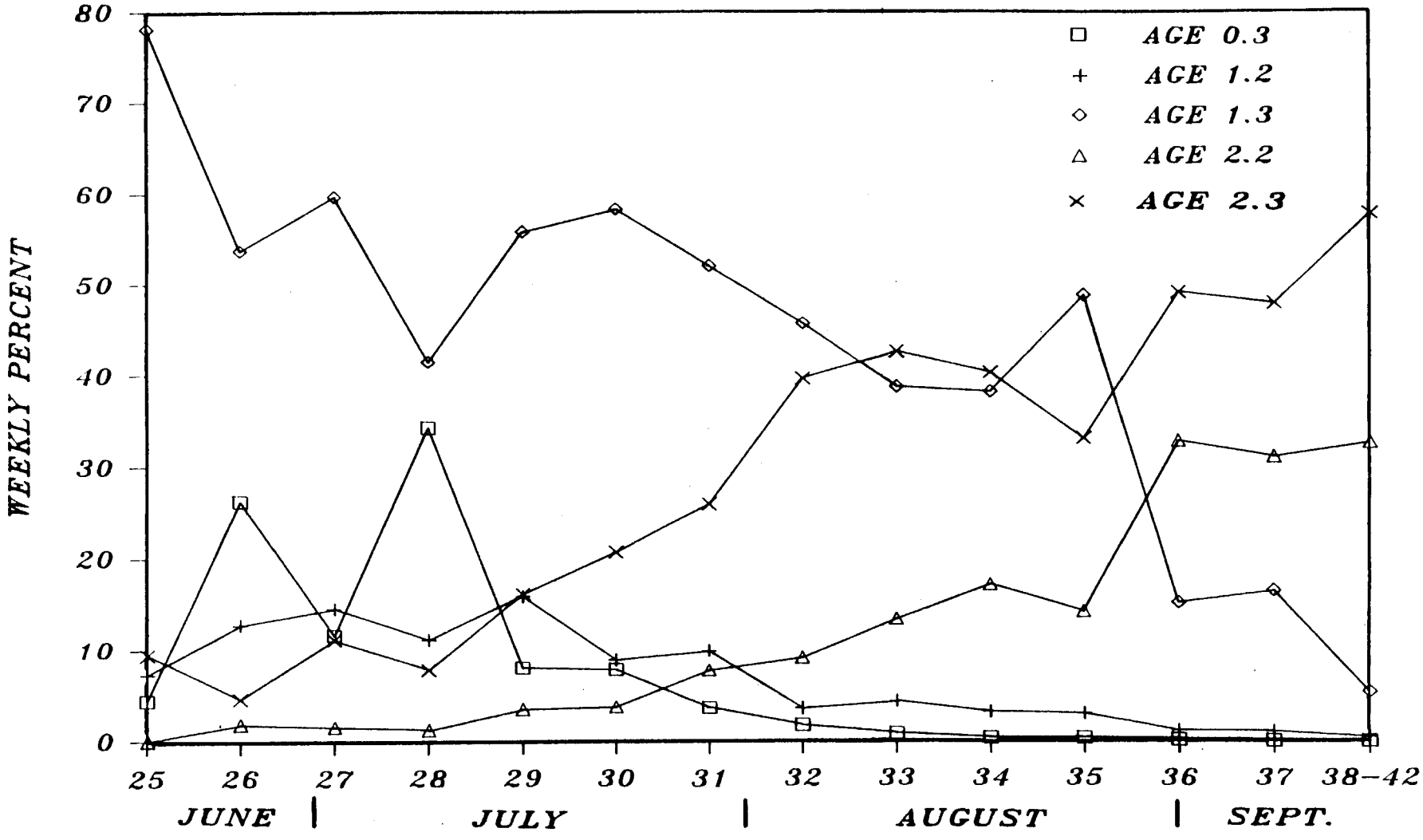

Figure 4. Weekly age composition of sockeye salmon harvested in Lynn Canal, 1986.

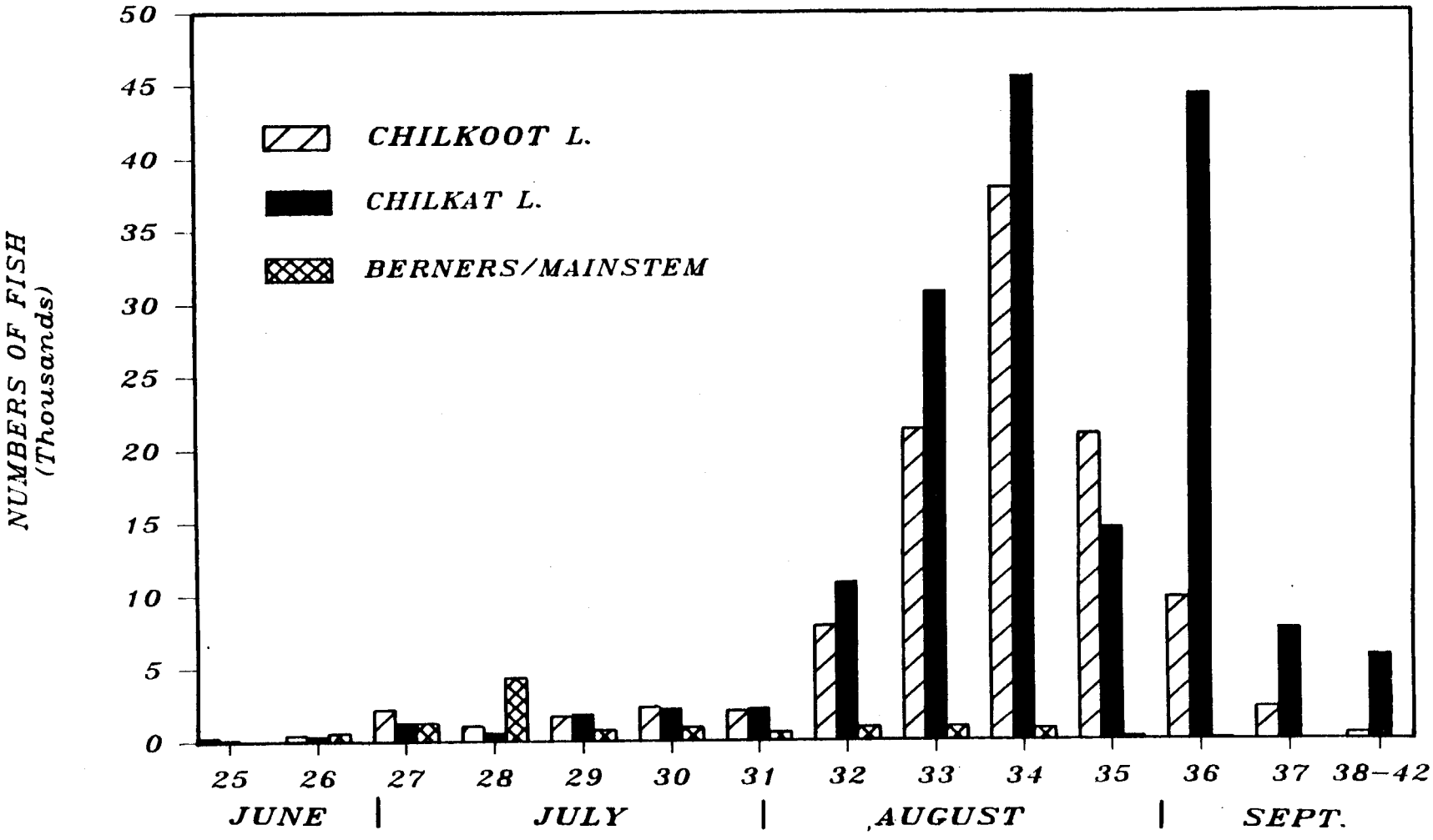

Figure 5. The catch of Chilkoot Lake, Chilkat Lake, and Berners Bay/Chilkat Mainstem sockeye salmon in the Lynn Canal drift gillnet fishery, by week, 1986.

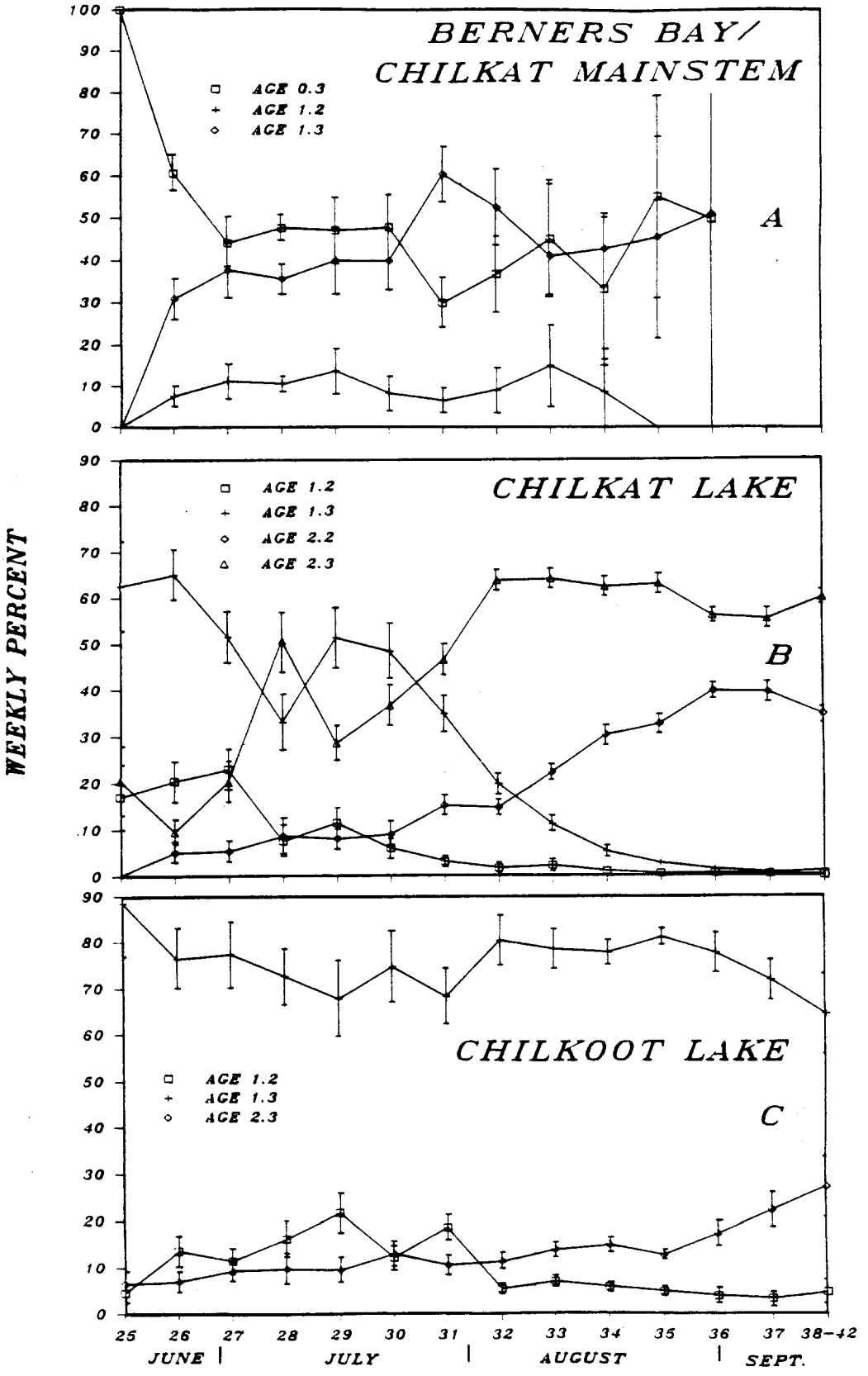

Figure 6. Weekly age composition of sockeye salmon harvested in Lynn Canal, by stock, 1986. Confidence intervals are ± one standard error.

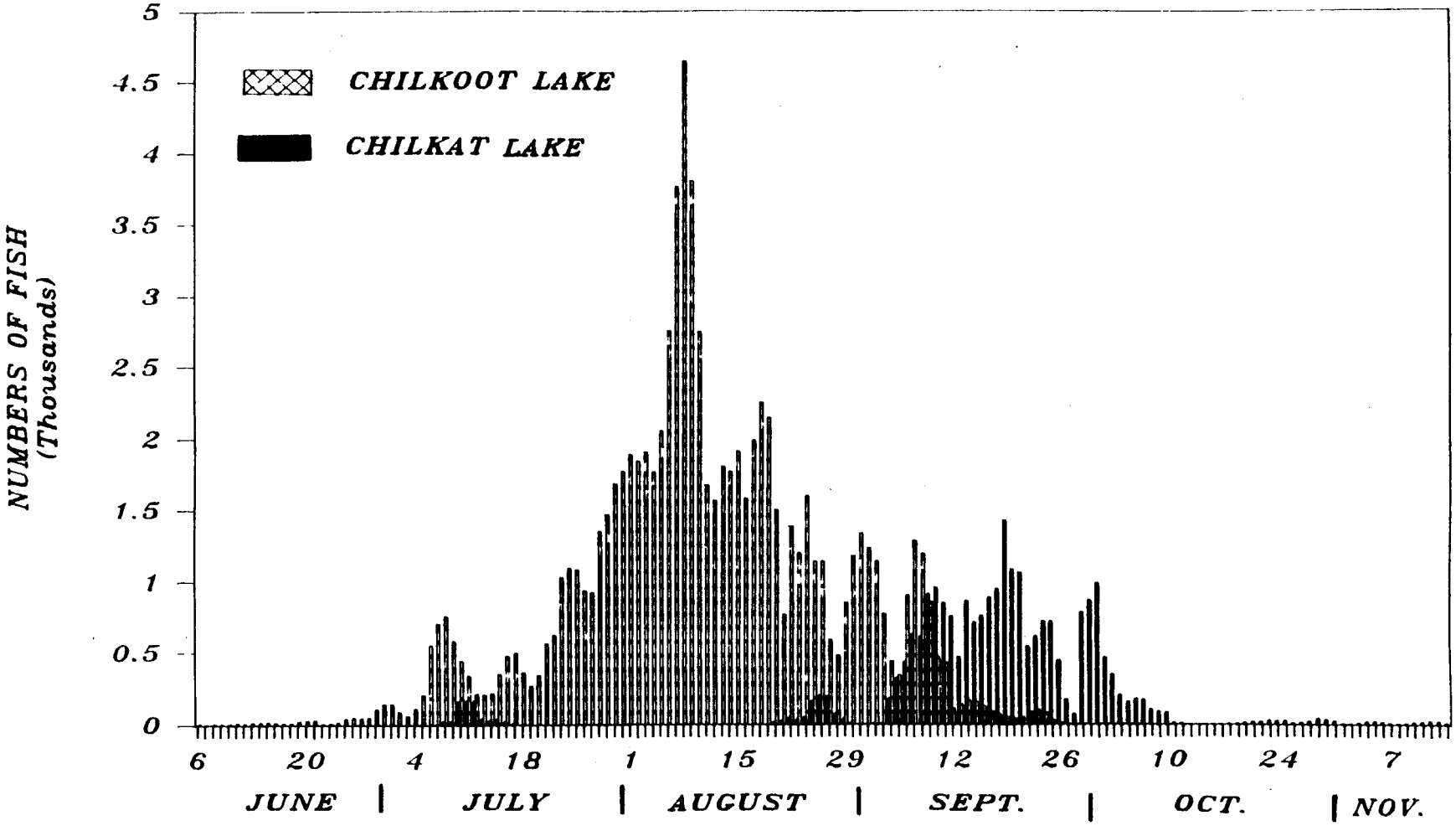

Figure 7. Daily escapement of sockeye salmon into Chilkat and Chilkoot Lakes smoothed by a moving 3-day average, 1986.

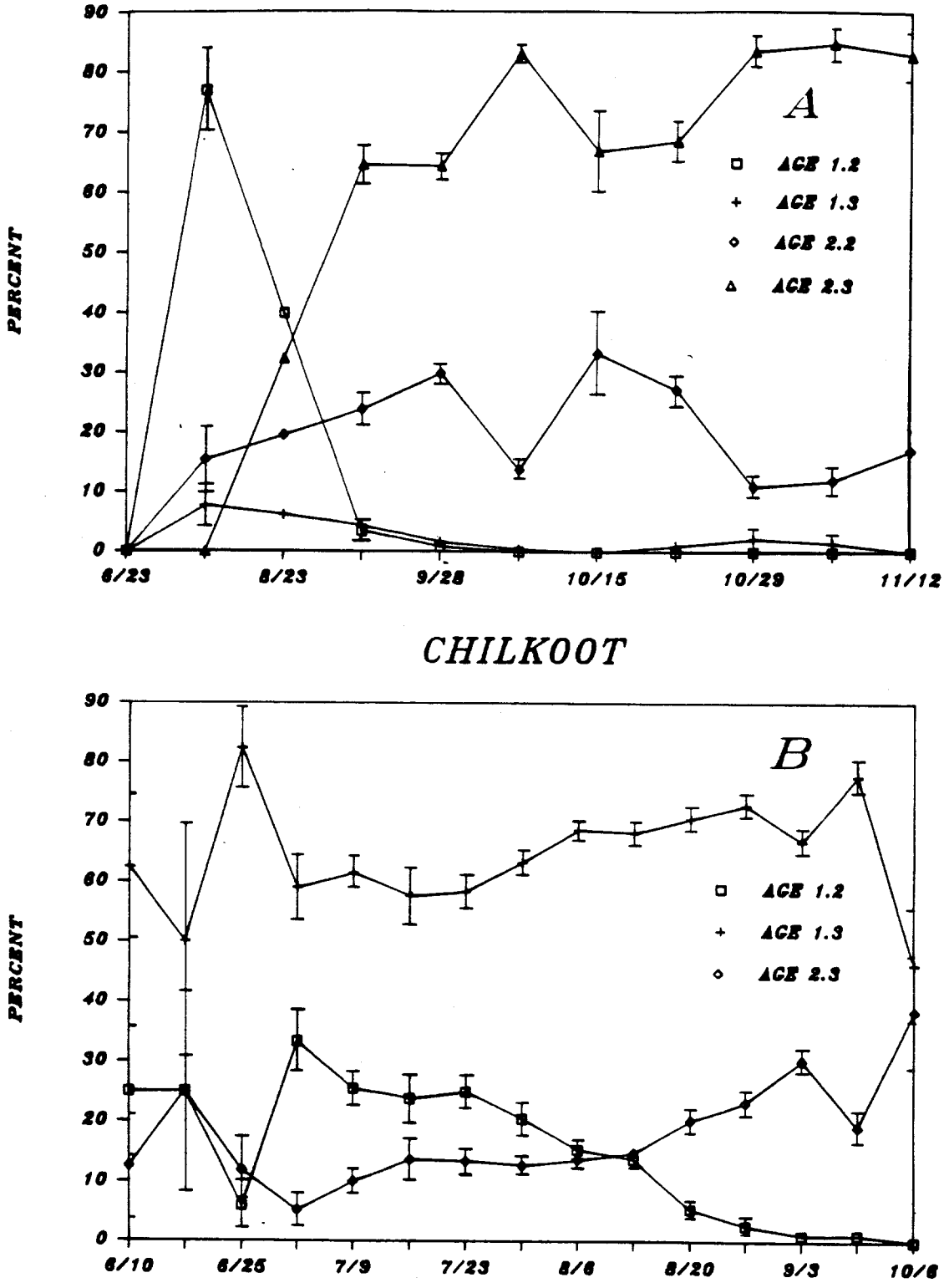

Figure 8. Period age composition of sockeye salmon escapements to Chilkat and Chilkoot Lakes in 1986. Confidence intervals are ± one standard error.

Table 1. Classification matrices for visual classification models of freshwater age classes of sockeye salmon stocks contributing to the Lynn Canal (District 115) drift gillnet fishery, 1986.

Model: Fish aged 1. (Statistical Weeks 25 - 28; 15 June - 12 July)

Actual Stock of Origin	Sample Size	Classified Group of Origin		
		Chilkoot	Chilkat	Berners/Mainstem
Chilkoot	29	.828		.172
Chilkat	25		.960	.040
Berners/Mainstem	44	.023		.977
		Overall Classification Accuracy = .929		

Model: Fish aged 1. (Statistical Weeks 29 - 38; 13 July - 20 September)

Actual Stock of Origin	Sample Size	Classified Group of Origin		
		Chilkoot	Chilkat	Berners/Mainstem
Chilkoot	89	1.000		
Chilkat	7	.143	.857	
Berners/Mainstem	4			1.000
		Overall Classification Accuracy = .990		

Model: Fish aged 2. (All Weeks; 15 June - 20 September)

Actual Stock of Origin	Sample Size	Classified Group of Origin		
		Chilkoot	Chilkat	Berners/Mainstem
Chilkoot	6	1.000		
Chilkat	90		1.000	
Berners/Mainstem	1			1.000
		Overall Classification Accuracy = 1.000		

Model: Fish aged 3. (All Weeks; 15 June - 20 September)

Actual Stock of Origin	Sample Size	Classified Group of Origin	
		Chilkoot	Chilkat
Chilkoot	1	1.000	
Chilkat	17		1.000
		Overall Classification Accuracy = 1.000	

Table 2. Comparison of in-season versus post-season weekly stock composition estimates of the Lynn Canal sockeye salmon harvest, 1986.

Statistical Week	Chilkoot		Chilkat		Berners/Mainstem	
	In-season	Post-season	In-season	Post-season	In-season	Post-season
25	0.635	0.707	0.248	0.248	0.117	0.045
26	0.265	0.307	0.250	0.259	0.485	0.434
27	0.392	0.457	0.271	0.279	0.337	0.264
28	0.153	0.172	0.102	0.104	0.745	0.724
29	0.428	0.395	0.400	0.433	0.172	0.172
30	0.457	0.430	0.379	0.405	0.164	0.165
31	0.442	0.421	0.435	0.457	0.123	0.122
32	0.419	0.404	0.536	0.550	0.045	0.046
33	0.412	0.402	0.570	0.580	0.018	0.018
34	0.454	0.450	0.536	0.540	0.010	0.010
35	0.587	0.586	0.407	0.408	0.006	0.006
36	0.182	0.180	0.817	0.818	0.001	0.002
37	0.223	0.222	0.777	0.778	0.000	0.000
38-41	0.069	0.067	0.931	0.933	0.000	0.000
Total 1/	0.385	0.381	0.574	0.580	0.041	0.039

1/ Weighted by weekly catches.

Table 3. Fishery openings, effort, harvest, and CPUE of sockeye salmon in Lynn Canal (District 115) by date and statistical week, 1986.

Section	Statistical Week	Dates Fished	Hours (H)	Boats (B) 1/	Catch	CPUE Fish/Boatday
15-A 2/	25	6/15 - 6/18	72	34	355	3.5
15-A 2/	26	6/22 - 6/24	48	44	1,379	15.7
15-A & C 3/	27	6/29 - 7/01	48	69	4,670	33.9
15-AB & C 4/	28	7/06 - 7/07	24	76	6,025	79.3
15-A & C 5/	29	7/13 - 7/15	48	69	4,293	31.1
15-A 6/	30	7/20 - 7/21	24	46	5,448	118.4
15-A 2/	31	7/27 - 7/28	24	68	4,907	72.2
15-A 2/	32	8/04 - 8/06	48	93	19,578	105.3
15-A 7/	33	8/10 - 8/12	48	138	53,112	192.4
15-A & C 8/	34	8/17 - 8/19	48	218	84,191	193.1
15-A & C 9/	35	8/24 - 8/26	48	198	35,784	90.4
15-A & C 10/	36	8/31 - 9/03	72	177	54,211	102.9
15-A & C 11/	37	9/07 - 9/10	72	218	9,925	15.2
15-A & C 12/	38	9/14 - 9/17	72	225	5,173	7.7
15-A & C 13/	39	9/21 - 9/23	48	235	708	1.5
15-A & C 13/	40	9/28 - 9/30	48	181	384	1.1
15-A & C 14/	41	10/5 - 10/7	48	121	62	0.3
Total					290,205	

1/ Ray Staska, ADF&G, Comm. Fish Div., Haines, U.S.A.

2/ Section 15-A open south of the latitude of the southernmost tip of Seduction Point.

3/ Section 15-A open same as above.
Section 15-C open south of the latitude of Point Bridget and north and east of a line from a point on the eastern mainland shore at the latitude of Vanderbilt Reef Light to Vanderbilt Reef Light to Little Island Light.

4/ Section 15-A open same as above.
Section 15-B open south of the latitude of Point St. Mary.
Section 15-C open same as above.

5/ Section 15-A open same as above.
Section 15-C open within two nautical miles of the western shore of Lynn Canal.

6/ Section 15-A open south of the latitude of the southernmost tip of Talsani Island.

7/ Section 15-A open.

8/ Section 15-A open.
Section 15-C open.

9/ Section 15-A open from 12:01 p.m. 8/24 through 12:00 noon 8/25 in all areas and from 12:01 p.m. 8/25 through 12:00 noon 8/26 in the waters of Chilkoot Inlet and Lutak Inlet north of Seduction Point.
Section 15-C open in all areas from 12:01 p.m. 8/25 through 12:00 noon 8/26,and from 12:00 p.m. 8/25 through 12:00 noon 8/26 in the waters within two nautical miles of the western shore of Lynn Canal.

10/ Section 15-A open from 12:01 p.m. 8/31 through 12:00 noon 9/3.
Section 15-C open from 12:01 p.m. 8/31 through 12:00 noon 9/2.

11/ Section 15-A open in all areas from 12:01 p.m 9/7 through 12:00 noon 9/9 and from 12:01 p.m. 9/7 through 12:00 noon 9/10 in the waters of Chilkoot Inlet and Lutak Inlet north of the latitude of the southernmost tip of Seduction Point.
Section 15-C open 12:01 p.m. 9/7 through 12:00 noon 9/9.

12/ Section 15-A open from 12:01 p.m. 9/14 through 12:00 noon 9/17.
Section 15-C open from 12:01 p.m. 9/14 through 12:00 noon 9/16.

13/ Section 15-A open.
Section 15-C open south of the latitude of Point Bridget.

14/ Section 15-A open.
Section 15-C open.

Table 4. Catch, escapement, total run, and exploitation rates of Lynn Canal sockeye salmon by age class and system, 1986.

System		Brood Year and Age Class												
		1983		1982			1981			1980		1979		
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Chilkoot Lake															
Catch	N				6,907			86,053	1,339	522	15,265		222	122	110,430
	%				6.25			77.93	1.21	0.47	13.82		0.20	0.11	100.0
Escapement	N		43		11,367			59,284	2,005	493	14,776		116	40	88,124
	%		0.05		12.90			67.27	2.28	0.56	16.77		0.13	0.05	100.0
Total Run	N		43		18,274			145,337	3,344	1,015	30,041		338	162	198,554
	%		0.02		9.20			73.20	1.68	0.51	15.13		0.17	<0.1	100.0
Expl. Rate			0.00		0.38			0.59	0.40	0.51	0.51		0.66	0.75	0.56
Chilkat Lake															
Catch	N				2,506			13,015	50,603	22	99,774	2,103	79	259	168,361
	%				1.49			7.73	30.06	0.01	59.26	1.25	0.05	0.15	100.0
Escapement	N				1,700	470		836	5,887		14,544	384		126	23,947
	%				7.10	1.96		3.49	24.58		60.73	1.60		0.53	100.0
Total Run	N				4,206	470		13,851	56,490	22	114,318	2,487	79	385	192,308
	%				2.19	0.24		7.20	29.37	0.01	59.45	1.29	<0.1	<0.1	100.0
Expl. Rate					0.60	0.00		0.94	0.90	1.00	0.87	0.85	1.00	0.67	0.88
Berners Bay/ Chilkat Mainstem															
Catch	N	437		5,114	1,139		21	4,541	19	2	141				11,414
	%	3.83		44.80	9.98		0.18	39.78	0.17	0.02	1.24				100.0
Lace River Escapement	%	1.2	1.0	3.5	2.4			3.6			0.7				100.0
Chilkat Mainstem Escapement	%	2.3		4.7	3.4		0.9	4.1	1.5	0.9	0.9		0.9		100.0

Table 5. Average length by sex and age class of sockeye salmon system catches and escapements in Lynn Canal, 1986.

		Brood Year and Age Class												
		1983		1982			1981			1980			1979	
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4	3.3
Chilkat Lake														
District 115 Catch														
Male	Avg. Length				535.5			595.7	575.1	575.0	613.7	564.2	600.0	620.0
	Std. Error				3.4			2.6	2.0		1.4	9.2		
	Sample Size				50			133	218	1	453	12	1	1
Female	Avg. Length				538.5			582.7	554.9	630.0	600.4	550.8		585.0
	Std. Error				5.7			2.0	1.6		1.1	8.0		
	Sample Size				20			143	263	1	468	13		1
All Fish	Avg. Length				536.6			588.8	564.0	602.5	606.8	557.2	600.0	602.5
	Std. Error				2.8			1.6	1.3	27.5	0.9	6.1		17.5
	Sample Size				72			288	484	2	933	25	1	2
Escapement														
Male	Avg. Length				472.5	363.0		616.5	555.2		620.7	565.8		640.0
	Std. Error				14.9	7.8		8.9	4.0		1.3	18.0		10.0
	Sample Size				10	5		10	83		428	6		3
Female	Avg. Length				520.8			575.0	541.7		599.2	561.7		587.5
	Std. Error				15.6			10.8	2.5		1.7	8.9		2.5
	Sample Size				6			5	110		259	12		2
All Fish	Avg. Length				490.6	363.0		602.7	547.8		612.6	563.1		619.0
	Std. Error				12.2	7.8		8.5	2.3		1.1	8.2		14.0
	Sample Size				16	5		15	194		687	18		5
Chilkoot Lake														
Distict 115 Catch														
Male	Avg. Length				505.4			588.7	503.0	627.5	586.9		606.0	590.0
	Std. Error				4.2			1.9	12.9	5.7	2.5		11.8	
	Sample Size				85			531	5	6	98		5	1
Female	Avg. Length				500.4			577.2	492.1	603.3	578.5			
	Std. Error				6.5			1.0	14.5	6.0	2.9			
	Sample Size				27			472	7	6	70			
All Fish	Avg. Length				504.2			583.2	496.7	615.4	583.1		606.0	590.0
	Std. Error				3.5			1.1	9.7	5.4	1.9		11.8	
	Sample Size				113			1013	12	12	170		5	1
Escapement														
Male	Avg. Length		410.0		470.2			589.2	476.4	611.9	590.0		618.3	
	Std. Error				2.6			1.0	5.7	12.3	1.8		23.2	
	Sample Size		1		254			810	35	8	213		3	
Female	Avg. Length				491.0			573.6	510.0	611.3	570.2			565.0
	Std. Error				5.7			0.8	9.5	9.4	1.7			
	Sample Size				30			627	12	4	148			1
All Fish	Avg. Length		410.0		472.4			582.4	485.0	611.7	581.9		618.3	565.0
	Std. Error				2.4			0.7	5.3	8.5	1.4		23.2	
	Sample Size		1		284			1438	47	12	361		3	1

-Continued-

Table 5. Average length by sex and age class of sockeye salmon system catches and escapements in Lynn Canal, 1986 (continued).

		Brood Year and Age Class												
		1983		1982			1981			1980			1979	
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4	3.3
Berners Bay/Chilkat Mainstem														
Distict 115 Catch														
Male	Avg. Length	501.5		582.4	501.6			585.0	450.0		589.0			
	Std. Error	13.2		1.8	6.5			2.4			10.0			
	Sample Size	10		123	40			124	1		5			
Female	Avg. Length			571.0	507.9		635.0	572.0			582.5			
	Std. Error			1.9	10.6			2.8			22.5			
	Sample Size			87	7		1	90			2			
All Fish	Avg. Length	501.5		577.6	503.0		635.0	579.1	450.0		587.1			
	Std. Error	13.2		1.3	5.7			1.9			8.6			
	Sample Size	10		217	48		1	219	1		7			
Lace River Escapement														
Male	Avg. Length	439.0	282.5	583.0	479.4			574.8			590.0			
	Std. Error	11.0	4.3	3.5	11.5			5.7						
	Sample Size	5	4	23	9			26			1			
Female	Avg. Length			542.8	476.0			537.6			530.0			
	Std. Error			3.3	4.4			3.7						
	Sample Size			43	15			60			1			
All Fish	Avg. Length	439.0	282.5	556.8	477.3			548.8			560.0			
	Std. Error	11.0	4.3	3.4	5.0			3.6			30.0			
	Sample Size	5	4	66	24			86			2			
Chilkat River Mainstem Escapement														
Male	Avg. Length	449.2		593.8	444.7		600.0	569.0		600.0			605.0	
	Std. Error	19.7		4.6	9.3			9.8						
	Sample Size	6		28	15		1	15		1			1	
Female	Avg. Length	570.0		565.4	482.0			572.0			585.0			
	Std. Error			4.4	18.0			4.3						
	Sample Size	1		28	2			15			1			
All Fish	Avg. Length	466.4		579.6	449.1		600.0	570.5		600.0	585.0		605.0	
	Std. Error	24.0		3.7	8.8			5.3						
	Sample Size	7		56	17		1	30		1	1		1	

Table 6. Cumulative migratory time densities, mean dates of arrival, and variance for major age classes of sockeye salmon stocks which returned to Lynn Canal, 1986.

Catches in District 115

Statistical Week	Dates	Stock Group and Age Class: Chilkoot Lake 1.2	Chilkoot Lake 1.3	Chilkoot Lake 2.3	Chilkoot Lake Total	Chilkat Lake 1.2	Chilkat Lake 1.3	Chilkat Lake 2.2	Chilkat Lake 2.3	Chilkat Lake Total	Berners/Mainstem 0.3	Berners/Mainstem 1.3	Berners/Mainstem Total
25	6/15-6/21	0.002	0.003	0.001	0.002	0.006	0.004	0.000	.000	0.001	0.003	0.000	0.001
26	6/22-6/28	0.010	0.006	0.003	0.006	0.035	0.022	.000	0.001	0.003	0.074	0.041	0.054
27	6/29-7/05	0.045	0.026	0.016	0.025	0.154	0.074	0.002	0.003	0.010	0.180	0.142	0.162
28	7/06-7/12	0.069	0.034	0.022	0.035	0.173	0.089	0.003	0.006	0.014	0.584	0.482	0.544
29	7/13-7/19	0.122	0.048	0.033	0.050	0.258	0.163	0.006	0.012	0.025	0.651	0.547	0.609
30	7/20-7/26	0.163	0.068	0.052	0.071	0.310	0.245	0.009	0.020	0.038	0.735	0.625	0.688
31	7/27-8/02	0.218	0.084	0.066	0.090	0.338	0.305	0.016	0.030	0.052	0.769	0.704	0.740
32	8/03-8/09	0.278	0.158	0.124	0.162	0.413	0.469	0.048	0.099	0.116	0.834	0.808	0.819
33	8/10-8/16	0.485	0.352	0.315	0.355	0.686	0.734	0.183	0.297	0.299	0.917	0.893	0.902
34	8/17-8/23	0.792	0.694	0.679	0.698	0.867	0.916	0.456	0.580	0.569	0.969	0.970	0.974
35	8/24-8/30	0.934	0.891	0.852	0.888	0.892	0.946	0.551	0.672	0.656	0.992	0.990	0.992
36	8/31-9/06	0.987	0.978	0.961	0.976	0.985	0.991	0.899	0.922	0.919	1.000	1.000	1.000
37	9/07-9/13	0.997	0.997	0.993	0.996	0.997	0.995	0.960	0.965	0.965	1.000	1.000	1.000
38-41	9/14-10/11	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Mean Stat. Week		32.9	33.7	33.9	33.6	31.9	32.0	34.9	34.4	34.3	29.3	29.8	29.5
Mean Calendar Date		8/12	8/18	8/19	8/17	8/5	8/6	8/26	8/23	8/22	7/18	7/22	7/20
Variance		5.4	3.6	3.2	3.7	8.7	5.7	2.5	3.0	3.7	6.1	6.3	6.2
Std. Error		2.3	1.9	1.8	1.9	2.9	2.4	1.6	1.7	1.9	2.5	2.5	2.5

Escapements

Period Dates	Statistical Week	Stock Group and Age Class: Chilkoot Lake 1.2	Chilkoot Lake 1.3	Chilkoot Lake 2.3	Chilkoot Lake Total	Period Dates	Statistical Week	Chilkat Lake 1.2	Chilkat Lake 1.3	Chilkat Lake 2.2	Chilkat Lake 2.3	Chilkat Lake Total
6/6-6/14	23.9	0.003	0.001	0.001	0.001	6/18-6/28	25.9	0.000	0.000	0.000	0.000	.000
6/15-6/21	25	0.006	0.003	0.004	0.003	6/29-8/16	32.1	0.408	0.073	0.020	0.000	0.033
6/22-6/28	26	0.008	0.006	0.006	0.006	8/17-8/30	34.5	0.642	0.137	0.049	0.019	0.070
6/29-7/5	27	0.033	0.014	0.009	0.016	8/31-9/20	37	0.959	0.841	0.583	0.596	0.626
7/6-7/12	28	0.114	0.052	0.034	0.057	9/21-10/4	39.5	1.000	0.987	0.964	0.923	0.941
7/13-7/19	29	0.163	0.075	0.055	0.083	10/5-10/11	41	1.000	0.990	0.983	0.970	0.976
7/20-7/26	30	0.282	0.129	0.105	0.146	10/12-10/1	42	1.000	0.990	0.984	0.971	0.977
7/27-8/2	31	0.487	0.251	0.203	0.276	10/19-10/2	43	1.000	0.993	0.991	0.978	0.983
8/3-8/9	32	0.775	0.502	0.403	0.520	10/26-11/1	44	1.000	0.998	0.994	0.987	0.990
8/10-8/16	33	0.921	0.643	0.526	0.660	11/2-11/8	45	1.000	1.000	0.996	0.993	0.995
8/17-8/23	34	0.976	0.784	0.689	0.794	11/9-11/15	46	1.000	1.000	1.000	1.000	1.000
8/24-8/30	35	0.990	0.863	0.789	0.867							
8/31-9/6	36	0.995	0.924	0.901	0.928							
9/7-9/13	37	1.000	0.990	0.967	0.986							
9/14-10/29	40.6	1.000	1.000	1.000	1.000							
Mean Stat. Week		31.2	32.4	32.1	32.1			34.5	36.9	38.0	38.2	37.8
Mean Calendar Date		7/31	8/9	8/7	8/7			8/24	9/9	9/17	9/18	9/16
Variance		3.6	5.9	8.6	6.5			5.4	3.6	3.3	3.2	4.2
Std. Error		1.9	2.4	2.9	2.5			2.3	1.9	1.8	1.8	2.0

APPENDICES

Appendix Table 1. Age composition of sockeye salmon harvested in the Lynn Canal drift gillnet fishery, by fishing period, 1986.

	Brood Year and Age Class											
	1983	1982		1981			1980			1979		
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Statistical Week 25 (June 15 - 21)												
Sample Number		6	10		107			13		1		137
Percent		4.4	7.3		78.1			9.5		0.7		100.0
Std. Error		1.8	2.2		3.5			2.5		0.7		
Catch		16	26		277			34		2		355
Statistical Week 26 (June 22 - 28)												
Sample Number	1	120	58		245	8	2	21		1	1	457
Percent	0.2	26.3	12.7		53.6	1.8	0.4	4.6		0.2	0.2	100.0
Std. Error	0.2	2.1	1.6		2.3	0.6	0.3	1.0		0.2	0.2	
Catch	3	362	175		739	24	6	63		4	3	1379
Statistical Week 27 (June 29 - July 5)												
Sample Number	3	47	59		242	6	2	45		2		406
Percent	0.7	11.6	14.5		59.6	1.5	0.5	11.1		0.5		100.0
Std. Error	0.4	1.6	1.8		2.4	0.6	0.3	1.6		0.3		
Catch	35	541	679		2783	69	22	518		23		4670
Statistical Week 28 (July 6 - 12)												
Sample Number	26	228	74		276	8	1	52				665
Percent	3.9	34.3	11.1		41.5	1.2	0.2	7.8				100.0
Std. Error	0.8	1.8	1.2		1.9	0.4	0.2	1.0				
Catch	236	2066	670		2501	72	9	471				6025
Statistical Week 29 (July 13 - 19)												
Sample Number		28	55		194	12	2	56		1		348
Percent		8.0	15.8		55.7	3.4	0.6	16.1		0.3		100.0
Std. Error		1.5	2.0		2.7	1.0	0.4	2.0		0.3		
Catch		345	679		2394	148	24	690		13		4293
Statistical Week 30 (July 20 - 26)												
Sample Number	2	30	34		223	14		79			1	383
Percent	0.5	7.8	8.9		58.2	3.7		20.6			0.3	100.0
Std. Error	0.4	1.4	1.5		2.5	1.0		2.1			0.3	
Catch	28	427	484		3172	199		1124			14	5448
Statistical Week 31 (July 27 - August 2)												
Sample Number		24	66		345	51	6	172				664
Percent		3.6	9.9		52.0	7.7	0.9	25.9				100.0
Std. Error		0.7	1.2		1.9	1.0	0.4	1.7				
Catch		177	488		2550	377	44	1271				4907
Statistical Week 32 (August 3 - 9)												
Sample Number		16	33	1	434	86	3	376		1		950
Percent		1.7	3.5	0.1	45.7	9.1	0.3	39.6		0.1		100.0
Std. Error		0.4	0.6	0.1	1.6	0.9	0.2	1.6		0.1		
Number		330	680	21	8944	1772	61	7749		21		19578
Statistical Week 33 (August 10 - 16)												
Sample Number		9	48		437	150		481	2	1	1	1129
Percent		0.8	4.3		38.7	13.3		42.6	0.2	0.1	0.1	100.0
Std. Error		0.3	0.6		1.5	1.0		1.5	0.1	0.1	0.1	
Catch		423	2258		20558	7056		22627	94	48	48	53112
Statistical Week 34 (August 17 - 23)												
Sample Number	2	4	39		474	212	3	500	5	2	2	1243
Percent	0.2	0.3	3.1		38.1	17.1	0.2	40.2	0.4	0.2	0.2	100.0
Std. Error	0.1	0.2	0.5		1.4	1.1	0.1	1.4	0.2	0.1	0.1	
Catch	135	271	2642		32105	14359	203	33866	339	135	136	84191
Statistical Week 35 (August 24 - 30)												
Sample Number		4	37		616	178	3	418	6		3	1265
Percent		0.3	2.9		48.7	14.1	0.2	33.0	0.5		0.2	100.0
Std. Error		0.2	0.5		1.4	1.0	0.1	1.3	0.2		0.1	
Catch		113	1047		17425	5035	85	11824	170		85	35784
Statistical Week 36 (August 31 - Sept. 6)												
Sample Number		1	14		192	415	1	622	23	1	1	1270
Percent		0.1	1.1		15.1	32.7	0.1	49.0	1.8	0.1	0.1	100.0
Std. Error		0.1	0.3		1.0	1.3	0.1	1.4	0.4	0.1	0.1	
Catch		43	598		8194	17715	43	26550	982	43	43	54211
Statistical Week 37 (Sept. 7 - 13)												
Sample Number			7		114	215	3	332	22		1	694
Percent			1.0		16.4	31.0	0.4	47.8	3.2		0.1	100.0
Std. Error			0.4		1.4	1.8	0.2	1.9	0.7		0.1	
Catch			100		1630	3075	43	4748	315		14	9925
Statistical Weeks 38 - 41 (Sept. 14 - 20) October 5 - 11												
Sample Number			4		53	324	1	573	32	2	6	995
Percent			0.4		5.3	32.6	0.1	57.6	3.2	0.2	0.6	100.0
Std. Error			0.2		0.7	1.5	0.1	1.6	0.6	0.1	0.2	
Catch			26		337	2060	6	3645	203	12	38	6327
Combined Periods (Percentages are weighted by period catches)												
Sample Number	34	517	538	1	3952	1679	27	3740	90	12	16	10606
Percent	0.2	1.8	3.6	<0.1	35.7	17.9	0.2	39.7	0.7	0.1	0.1	100.0
Std. Error	<0.1	0.1	0.2	<0.1	0.6	0.5	<0.1	0.6	0.1	<0.1	<0.1	
Catch	437	5114	10552	21	103609	51961	546	115180	2103	301	381	290205

Appendix Table 2. Estimated contribution of Lynn Canal sockeye salmon stocks to the District 115 drift gill net fishery, by fishing period, 1986.

Stat Week		Stock and Freshwater Age Class: Chilkoot Lake 1.	2.	3.	Total	Chilkat Lake 1.	2.	3.	Total	Berners/Chilkat Mainstem 0.	1.	2.	Total	Lynn Canal Total by Age 0.	1.	2.	3.	Grand Total
	Sample 1/	80	7		87	27	7		34	6	10		16	6	117	14		137
25	Sample 2/	90.1	7.0		97.1	26.9	7.0		33.9	6.0	0.0		6.0	6	117	14		137
	Prop. 3/	0.770	0.500		0.707	0.230	0.500		0.248	1.000	0.000		0.045	0.044	0.854	0.102		1.000
	SE 4/	0.089	0.0		0.109	0.042	0.0		0.149	0.0	0.080		1.603					
	Catch	233	18		251	70	18		88	16			16	16	303	36		355
	Sample 1/	108	12	1	121	97	17		114	121	100	1	222	121	305	30	1	457
26	Sample 2/	127.5	12.0	1.0	140.5	101.0	17.0		118.0	121.0	76.6	1.0	198.6	121	305	30	1	457
	Prop. 3/	0.418	0.400	1.000	0.307	0.331	0.567		0.259	1.000	0.251	0.033	0.434	0.265	0.667	0.066	0.002	1.000
	SE 4/	0.050	0.0	0.0	0.112	0.031	0.0		0.086	0.0	0.051	0.0	0.087					
	Catch	384	36	3	423	305	52		357	365	231	3	599	365	920	91	3	1,379
	Sample 1/	140	19		159	81	29		110	50	82	5	137	50	303	53		406
27	Sample 2/	166.7	19.0		185.7	84.2	29.0		113.2	50.0	52.1	5.0	107.1	50	303	53		406
	Prop. 3/	0.550	0.358		0.457	0.278	0.547		0.279	1.000	0.172	0.094	0.264	0.123	0.746	0.131		1.000
	SE 4/	0.060	0.0		0.100	0.029	0.0		0.081	0.0	0.058	0.0	0.172					
	Catch	1,916	219		2,135	969	333		1,302	576	599	58	1,233	576	3,484	610		4,670
	Sample 1/	90	12		102	27	41		68	254	234	7	495	254	351	60		665
28	Sample 2/	102.1	12.0		114.1	28.1	41.0		69.1	254.0	220.8	7.0	481.8	254	351	60		665
	Prop. 3/	0.291	0.200		0.172	0.080	0.683		0.104	1.000	0.629	0.117	0.724	0.382	0.528	0.090		1.000
	SE 4/	0.042	0.0		0.133	0.015	0.0		0.103	0.0	0.043	0.0	0.034					
	Catch	926	109		1,035	254	371		625	2,302	2,000	63	4,365	2,302	3,180	543		6,025
	Sample 1/	135	14		149	84	55		139	28	32		60	28	251	69		348
29	Sample 2/	123.5	14.0		137.5	95.6	55.0		150.6	28.0	31.9		59.9	28	251	69		348
	Prop. 3/	0.492	0.203		0.395	0.381	0.797		0.433	1.000	0.127		0.172	0.080	0.721	0.198		1.000
	SE 4/	0.070	0.0		0.130	0.069	0.0		0.118	0.0	0.021		0.118					
	Catch	1,524	173		1,697	1,180	678		1,858	345	393		738	345	3,097	851		4,293
	Sample 1/	153	21	1	175	74	71		145	32	30	1	63	32	257	93	1	383
30	Sample 2/	142.6	21.0	1.0	164.6	84.3	71.0		155.3	32.0	30.1	1.0	63.1	32	257	93	1	383
	Prop. 3/	0.555	0.226	1.000	0.430	0.328	0.763		0.405	1.000	0.117	0.011	0.165	0.084	0.671	0.243	0.003	1.000
	SE 4/	0.062	0.0	0.0	0.099	0.061	0.0		0.105	0.0	0.020	0.0	0.114					
	Catch	2,029	299	14	2,342	1,199	1,010		2,209	455	428	14	897	455	3,656	1,323	14	5,448
	Sample 1/	261	33		294	102	187		289	24	54	3	81	24	417	223		664
31	Sample 2/	246.9	33.0		279.9	116.3	187.0		303.3	24.0	53.8	3.0	80.8	24	417	223		664
	Prop. 3/	0.592	0.148		0.421	0.279	0.839		0.457	1.000	0.129	0.013	0.122	0.036	0.628	0.336		1.000
	SE 4/	0.051	0.0		0.079	0.050	0.0		0.073	0.0	0.016	0.0	0.101					
	Catch	1,824	244		2,068	860	1,382		2,242	177	398	22	597	177	3,082	1,648		4,907
	Sample 1/	344	53		397	99	410		509	17	27		44	17	470	463		950
32	Sample 2/	330.4	53.0		383.4	112.8	410.0		522.8	17.0	26.8		43.8	17	470	463		950
	Prop. 3/	0.703	0.114		0.404	0.240	0.886		0.550	1.000	0.057		0.046	0.018	0.495	0.487		1.000
	SE 4/	0.044	0.0		0.059	0.044	0.0		0.044	0.0	0.011		0.150					
	Catch	6,809	1,092		7,901	2,324	8,450		10,774	351	552		903	351	9,685	9,542		19,578

-Continued-

Appendix Table 2. Estimated contribution of Lynn Canal sockeye salmon stocks to the District 115 drift gill net fishery, by fishing period, 1986 (continued).

Stat Week		Stock and Freshwater Age Class: Chilkoot Lake 1.	2.	3.	Total	Chilkat Lake 1.	2.	3.	Total	Berners/Chilkat Mainstem 0.	1.	2.	Total	Lynn Canal Total by Age 0.	1.	2.	3.	Grand Total
	Sample 1/	397	67	1	465	77	565	2	644	9	11		20	9	485	632	3	1129
33	Sample 2/	386.1	67.0	1.0	454.1	87.8	565.0	2.0	654.8	9.0	11.2		20.2	9	485	632	3	1129
	Prop. 3/	0.796	0.106	0.333	0.402	0.181	0.894	0.667	0.580	1.000	0.023		0.018	0.008	0.430	0.560	0.003	1.000
	SE 4/	0.035	0.0	0.0	0.045	0.034	0.0	0.0	0.031	0.0	0.007		0.224					
	Catch	18,161	3,152	48	21,361	4,130	26,579	94	30,803	423	525		948	423	22,816	29,731	142	53,112
	Sample 1/	473	91		564	37	623	7	667	6	6		12	6	516	714	7	1243
34	Sample 2/	468.0	91.0		559.0	41.8	623.0	7.0	671.8	6.0	6.2		12.2	6	516	714	7	1243
	Prop. 3/	0.907	0.127		0.450	0.081	0.873	1.000	0.540	1.000	0.012		0.010	0.005	0.415	0.574	0.006	1.000
	SE 4/	0.019	0.0		0.030	0.019	0.0	0.0	0.025	0.0	0.005		0.289					
	Catch	31,700	6,164		37,864	2,831	42,196	475	45,502	406	419		825	406	34,950	48,360	475	84,191
	Sample 1/	639	102	2	743	14	494	7	515	4	3		7	4	656	596	9	1265
35	Sample 2/	637.0	102.0	2.0	741.0	15.7	494.0	7.0	516.7	4.0	3.3		7.3	4	656	596	9	1265
	Prop. 3/	0.971	0.171	0.222	0.586	0.024	0.829	0.778	0.408	1.000	0.005		0.006	0.003	0.519	0.471	0.007	1.000
	SE 4/	0.008	0.0	0.0	0.020	0.007	0.0	0.0	0.029	0.0	0.003		0.391					
	Catch	18,019	2,885	57	20,961	445	13,974	198	14,617	113	93		206	113	18,557	16,859	255	35,784
	Sample 1/	189	42		231	17	996	24	1037	1	1		2	1	207	1038	24	1270
36	Sample 2/	186.7	42.0		228.7	19.3	996.0	24.0	1039.3	1.0	1.0		2.0	1	207	1038	24	1270
	Prop. 3/	0.902	0.040		0.180	0.093	0.960	1.000	0.818	1.000	0.005		0.002	0.001	0.163	0.817	0.019	1.000
	SE 4/	0.027	0.0		0.055	0.027	0.0	0.0	0.012	0.0	0.005		0.968					
	Catch	7,969	1,793		9,762	822	42,515	1,025	44,362	43	44		87	43	8,835	44,308	1,025	54,211
	Sample 1/	119	36		155	5	511	23	539				0		124	547	23	694
37	Sample 2/	118.3	36.0		154.3	5.7	511.0	23.0	539.7				0.0		124	547	23	694
	Prop. 3/	0.954	0.066		0.222	0.046	0.934	1.000	0.778				0.000		0.179	0.788	0.033	1.000
	SE 4/	0.022	0.0		0.061	0.022	0.0	0.0	0.017				0.0					
	Catch	1,691	515		2,206	82	7,308	329	7,719				0		1,773	7,823	329	9,925
	Sample 1/	48	20		68	10	879	38	927				0		58	899	38	995
38-41	Sample 2/	46.6	20.0		66.6	11.4	879.0	38.0	928.4				0.0		58	899	38	995
	Prop. 3/	0.804	0.022		0.067	0.196	0.978	1.000	0.933				0.000		0.058	0.904	0.038	1.000
	SE 4/	0.066	0.0		0.105	0.066	0.0	0.0	0.007				0.0					
	Catch	297	127		424	72	5,590	241	5,903				0		369	5,717	241	6,327
	Sample 1/	3176	529	5	3710	751	4885	101	5737	552	590	17	1159	552	4517	5431	106	10606
Total	Sample 2/	3172.5	529.0	5.0	3706.5	830.9	4885.0	101.0	5816.9	552.0	513.6	17.0	1082.6	552	4517	5431	106	10606
	Prop. 3/	0.815	0.100	0.049	0.381	0.136	0.899	0.951	0.580	1.000	0.050	0.001	0.039	0.052	0.426	0.512	0.010	1.000
	Catch	93,482	16,826	121	110,430	15,543	150,456	2,363	168,361	5,572	5,682	160	11,414	5,572	114,707	167,442	2,484	290,205

1/ Sample size before correcting for misclassification.
2/ Sample size after correcting for misclassification.
3/ Stock proportion of freshwater age class in overall Lynn Canal sample.
4/ Standard errors presented by freshwater age class is that due to misclassification between stocks. Standard error presented for total weekly weekly stock contribution accounts for Lynn Canal age composition, stock composition estimates, standard error of misclassification, total ageable sample size, and catch magnitude using the delta method in Seber (1982).

Appendix Table 3. Age composition of sockeye salmon returning to Chilkoot Lake and harvested in Lynn Canal by fishing period, 1986.

Stat Week	Sex	Comp.		Brood Year and Age Class							
				1982	1981		1980		1979		
				1.2	1.3	2.2	1.4	2.3	2.4	3.3	Total
25	Male	50.6	Percent	4.4	88.4			6.4	0.8		100.0
	Female	49.4	Catch	11	222			16	2		251
26	Male	43.8	Percent	13.5	76.4	0.7	0.9	6.9	0.9	0.7	100.0
	Female	56.2	Catch	57	323	3	4	29	4	3	423
27	Male	66.0	Percent	11.4	77.3		1.0	9.2	1.1		100.0
	Female	34.0	Catch	243	1,651		22	196	23		2,135
28	Male	36.3	Percent	16.0	72.6	0.9	0.9	9.7			100.0
	Female	63.7	Catch	166	751	9	9	100			1,035
29	Male	53.7	Percent	21.6	67.6		0.6	9.4	0.8		100.0
	Female	46.3	Catch	366	1,147		11	160	13		1,697
30	Male	50.8	Percent	12.0	74.6			12.8		0.6	100.0
	Female	49.2	Catch	281	1,748			299		14	2,342
31	Male	61.6	Percent	18.4	68.1	1.5	1.7	10.3			100.0
	Female	38.4	Catch	381	1,408	30	35	214			2,068
32	Male	54.2	Percent	5.2	80.2	2.3	0.8	11.2	0.3		100.0
	Female	45.8	Catch	412	6,336	185	61	886	21		7,901
33	Male	56.8	Percent	6.7	78.3	0.9		13.7	0.2	0.2	100.0
	Female	43.2	Catch	1,434	16,727	188		2,916	48	48	21,361
34	Male	52.0	Percent	5.6	77.6	1.4	0.5	14.7	0.2		100.0
	Female	48.0	Catch	2,119	29,378	542	203	5,554	68		37,864
35	Male	52.6	Percent	4.7	80.9	1.2	0.4	12.5		0.3	100.0
	Female	47.4	Catch	984	16,950	255	85	2,630		57	20,961
36	Male	64.1	Percent	3.7	77.5	0.9	0.4	17.1	0.4		100.0
	Female	35.9	Catch	365	7,561	85	43	1,665	43		9,762
37	Male	59.4	Percent	3.1	71.6	1.3	1.9	22.0			100.0
	Female	40.6	Catch	69	1,579	29	43	486			2,206
38-41	Male	57.4	Percent	4.5	64.2	3.1	1.4	26.9			100.0
	Female	42.6	Catch	19	272	13	6	114			424
Total	Male	54.3	Percent	6.3	77.9	1.2	0.5	13.8	0.2	0.1	100.0
	Female	45.7	Catch	6,907	86,053	1,339	522	15,265	222	122	110,430

Appendix Table 4. Age composition of sockeye salmon returning to Chilkat Lake and harvested in Lynn Canal, by fishing period, 1986.

Stat Week	Sex	Comp.		Brood Year and Age Class: 1982 1.2	1981 1.3	1981 2.2	1980 1.4	1980 2.3	1980 3.2	1979 2.4	1979 3.3	Total
25	Male	50.0	Percent	17.0	62.5			20.5				100.0
	Female	50.0	Catch	15	55			18				88
26	Male	45.6	Percent	20.4	65.0	5.0		9.5				100.0
	Female	54.4	Catch	73	232	18		34				357
27	Male	53.6	Percent	23.0	51.5	5.3		20.3				100.0
	Female	46.4	Catch	299	670	69		264				1,302
28	Male	33.8	Percent	7.5	33.1	8.6		50.7				100.0
	Female	66.2	Catch	47	207	54		317				625
29	Male	48.6	Percent	11.5	51.3	7.5	0.7	28.5				100.0
	Female	51.4	Catch	213	954	140	13	530				1,858
30	Male	49.2	Percent	5.9	48.3	9.0		36.7				100.0
	Female	50.8	Catch	131	1,068	199		811				2,209
31	Male	56.1	Percent	3.1	34.9	15.2	0.4	46.5				100.0
	Female	43.9	Catch	69	782	340	9	1,042				2,242
32	Male	43.0	Percent	1.7	19.8	14.7		63.7				100.0
	Female	57.0	Catch	187	2,137	1,587		6,863				10,774
33	Male	44.9	Percent	2.2	11.2	22.3		64.0	0.3			100.0
	Female	55.1	Catch	684	3,446	6,868		19,711	94			30,803
34	Male	44.1	Percent	1.0	5.2	30.4		62.2	0.7	0.1	0.3	100.0
	Female	55.9	Catch	454	2,377	13,817		28,312	339	67	136	45,502
35	Male	43.4	Percent	0.4	2.6	32.7		62.9	1.2		0.2	100.0
	Female	56.6	Catch	63	382	4,780		9,194	170		28	14,617
36	Male	51.6	Percent	0.5	1.3	39.7		56.1	2.2		0.1	100.0
	Female	48.4	Catch	233	589	17,630		24,885	982		43	44,362
37	Male	54.5	Percent	0.4	0.7	39.5		55.2	4.1		0.2	100.0
	Female	45.5	Catch	31	51	3,046		4,262	315		14	7,719
38-42	Male	51.7	Percent	0.1	1.1	34.7		59.8	3.4	0.2	0.6	100.0
	Female	48.3	Catch	7	65	2,047		3,531	203	12	38	5,903
Total	Male	47.1	Percent	1.5	7.7	30.1	<0.1	59.3	1.2	<0.1	0.2	100.0
	Female	52.9	Catch	2,506	13,015	50,595	22	99,774	2,103	79	259	168,361

Appendix Table 5. Age composition of sockeye salmon bound for Berners Bay/Chilkat Mainstem and harvested in Lynn Canal, by fishing period, 1986.

Stat Week		Sex Comp.		Brood Year and Age Class								
				1983	1982			1981			1980	
				0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total
25	Male	31.3	Percent		100.0							100.0
	Female	68.8	Catch		16							16
26	Male	56.8	Percent	0.5	60.4	7.5		30.7	0.5	0.3		100.0
	Female	43.2	Catch	3	362	45		184	3	2		599
27	Male	72.3	Percent	2.8	43.9	11.1		37.5			4.7	100.0
	Female	27.7	Catch	35	541	137		462			58	1,233
28	Male	55.4	Percent	5.4	47.3	10.5		35.3	0.2		1.2	100.0
	Female	44.6	Catch	236	2,066	457		1,543	9		54	4,365
29	Male	50.0	Percent		46.7	13.6		39.7				100.0
	Female	50.0	Catch		345	100		293				738
30	Male	71.0	Percent	3.1	47.6	8.0		39.7			1.6	100.0
	Female	29.0	Catch	28	427	72		356			14	897
31	Male	51.9	Percent		29.6	6.4		60.3	1.2		2.5	100.0
	Female	48.1	Catch		177	38		360	7		15	597
32	Male	55.8	Percent		36.5	9.0	2.3	52.2				100.0
	Female	44.2	Catch		330	81	21	471				903
33	Male	42.1	Percent		44.6	14.8		40.6				100.0
	Female	57.9	Catch		423	140		385				948
34	Male	50.0	Percent	16.4	32.8	8.4		42.4				100.0
	Female	50.0	Catch	135	271	69		350				825
35	Male	50.0	Percent		54.9			45.1				100.0
	Female	50.0	Catch		113			93				206
36	Male	50.0	Percent		49.4			50.6				100.0
	Female	50.0	Catch		43			44				87
Total	Male	55.8	Percent	3.8	44.8	10.0	0.2	39.8	0.2	0.0	1.2	100.0
	Female	44.2	Catch	437	5,114	1,139	21	4,541	19	2	141	11,414

Appendix Table 6. Daily sockeye salmon counts and associated statistics from Chilkat Lake Weir, 1986.

Date		Daily Count	Cumulative Count	Daily Proportion of Total	Cumulative Proportion of Total
June	18	0	0	0.0000	0.0000
June	19	0	0	0.0000	0.0000
June	20	0	0	0.0000	0.0000
June	21	0	0	0.0000	0.0000
June	22	0	0	0.0000	0.0000
June	23	3	3	0.0001	0.0001
June	24	0	3	0.0000	0.0001
June	25	0	3	0.0000	0.0001
June	26	0	3	0.0000	0.0001
June	27	0	3	0.0000	0.0001
June	28	1	4	0.0000	0.0002
June	29	2	6	0.0001	0.0003
June	30	0	6	0.0000	0.0003
July	1	0	6	0.0000	0.0003
July	2	0	6	0.0000	0.0003
July	3	0	6	0.0000	0.0003
July	4	0	6	0.0000	0.0003
July	5	0	6	0.0000	0.0003
July	6	1	7	0.0000	0.0003
July	7	3	10	0.0001	0.0004
July	8	2	12	0.0001	0.0005
July	9	79	91	0.0033	0.0038
July	10	3	94	0.0001	0.0039
July	11	420	514	0.0175	0.0215
July	12	94	608	0.0039	0.0254
July	13	1	609	0.0000	0.0254
July	14	50	659	0.0021	0.0275
July	15	43	702	0.0018	0.0293
July	16	40	742	0.0017	0.0310
July	17	0	742	0.0000	0.0310
July	18	5	747	0.0002	0.0312
July	19	0	747	0.0000	0.0312
July	20	0	747	0.0000	0.0312
July	21	0	747	0.0000	0.0312
July	22	0	747	0.0000	0.0312
July	23	0	747	0.0000	0.0312
July	24	0	747	0.0000	0.0312
July	25	2	749	0.0001	0.0313
July	26	18	767	0.0008	0.0320
July	27	0	767	0.0000	0.0320
July	28	1	768	0.0000	0.0321
July	29	5	773	0.0002	0.0323
July	30	0	773	0.0000	0.0323
July	31	0	773	0.0000	0.0323
Aug.	1	8	781	0.0003	0.0326
Aug.	2	10	791	0.0004	0.0330
Aug.	3	1	792	0.0000	0.0331
Aug.	4	0	792	0.0000	0.0331
Aug.	5	0	792	0.0000	0.0331
Aug.	6	0	792	0.0000	0.0331
Aug.	7	0	792	0.0000	0.0331
Aug.	8	0	792	0.0000	0.0331
Aug.	9	0	792	0.0000	0.0331
Aug.	10	0	792	0.0000	0.0331
Aug.	11	0	792	0.0000	0.0331
Aug.	12	0	792	0.0000	0.0331
Aug.	13	0	792	0.0000	0.0331
Aug.	14	0	792	0.0000	0.0331
Aug.	15	3	795	0.0001	0.0332
Aug.	16	0	795	0.0000	0.0332
Aug.	17	0	795	0.0000	0.0332
Aug.	18	0	795	0.0000	0.0332
Aug.	19	0	795	0.0000	0.0332
Aug.	20	0	795	0.0000	0.0332
Aug.	21	57	852	0.0024	0.0356
Aug.	22	26	878	0.0011	0.0367
Aug.	23	55	933	0.0023	0.0390
Aug.	24	12	945	0.0005	0.0395
Aug.	25	92	1037	0.0038	0.0433
Aug.	26	393	1430	0.0164	0.0597
Aug.	27	135	1565	0.0056	0.0654
Aug.	28	68	1633	0.0028	0.0682
Aug.	29	36	1669	0.0015	0.0697
Aug.	30	0	1669	0.0000	0.0697
Aug.	31	0	1669	0.0000	0.0697

-Continued-

Appendix Table 6. Daily sockeye salmon counts and associated statistics from Chilkat Lake Weir, 1986 (continued).

Date		Daily Count	Cumulative Count	Daily Proportion of Total	Cumulative Proportion of Total
Sept.	1	8	1677	0.0003	0.0700
Sept.	2	13	1690	0.0005	0.0706
Sept.	3	14	1704	0.0006	0.0712
Sept.	4	2	1706	0.0001	0.0712
Sept.	5	535	2241	0.0223	0.0936
Sept.	6	434	2675	0.0181	0.1117
Sept.	7	348	3023	0.0145	0.1262
Sept.	8	1108	4131	0.0463	0.1725
Sept.	9	390	4521	0.0163	0.1888
Sept.	10	1252	5773	0.0523	0.2411
Sept.	11	1241	7014	0.0518	0.2929
Sept.	12	62	7076	0.0026	0.2955
Sept.	13	963	8039	0.0402	0.3357
Sept.	14	383	8422	0.0160	0.3517
Sept.	15	1254	9676	0.0524	0.4041
Sept.	16	485	10161	0.0203	0.4243
Sept.	17	540	10701	0.0225	0.4469
Sept.	18	1649	12350	0.0689	0.5157
Sept.	19	668	13018	0.0279	0.5436
Sept.	20	1964	14982	0.0820	0.6256
Sept.	21	625	15607	0.0261	0.6517
Sept.	22	600	16207	0.0251	0.6768
Sept.	23	414	16621	0.0173	0.6941
Sept.	24	833	17454	0.0348	0.7289
Sept.	25	913	18367	0.0381	0.7670
Sept.	26	411	18778	0.0172	0.7841
Sept.	27	0	18778	0.0000	0.7841
Sept.	28	108	18886	0.0045	0.7887
Sept.	29	111	18997	0.0046	0.7933
Sept.	30	2138	21135	0.0893	0.8826
Oct.	1	366	21501	0.0153	0.8979
Oct.	2	463	21964	0.0193	0.9172
Oct.	3	567	22531	0.0237	0.9409
Oct.	4	9	22540	0.0004	0.9412
Oct.	5	51	22591	0.0021	0.9434
Oct.	6	416	23007	0.0174	0.9607
Oct.	7	66	23073	0.0028	0.9635
Oct.	8	38	23111	0.0016	0.9651
Oct.	9	223	23334	0.0093	0.9744
Oct.	10	17	23351	0.0007	0.9751
Oct.	11	20	23371	0.0008	0.9759
Oct.	12	7	23378	0.0003	0.9762
Oct.	13	5	23383	0.0002	0.9764
Oct.	14	0	23383	0.0000	0.9764
Oct.	15	0	23383	0.0000	0.9764
Oct.	16	9	23392	0.0004	0.9768
Oct.	17	2	23394	0.0001	0.9769
Oct.	18	1	23395	0.0000	0.9769
Oct.	19	10	23405	0.0004	0.9774
Oct.	20	14	23419	0.0006	0.9780
Oct.	21	16	23435	0.0007	0.9786
Oct.	22	26	23461	0.0011	0.9797
Oct.	23	20	23481	0.0008	0.9805
Oct.	24	39	23520	0.0016	0.9822
Oct.	25	26	23546	0.0011	0.9833
Oct.	26	14	23560	0.0006	0.9838
Oct.	27	1	23561	0.0000	0.9839
Oct.	28	39	23600	0.0016	0.9855
Oct.	29	38	23638	0.0016	0.9871
Oct.	30	57	23695	0.0024	0.9895
Oct.	31	13	23708	0.0005	0.9900
Nov.	1	6	23714	0.0003	0.9903
Nov.	2	8	23722	0.0003	0.9906
Nov.	3	11	23733	0.0005	0.9911
Nov.	4	24	23757	0.0010	0.9921
Nov.	5	32	23789	0.0013	0.9934
Nov.	6	23	23812	0.0010	0.9944
Nov.	7	7	23819	0.0003	0.9947
Nov.	8	4	23823	0.0002	0.9948
Nov.	9	17	23840	0.0007	0.9955
Nov.	10	16	23856	0.0007	0.9962
Nov.	11	16	23872	0.0007	0.9969
Nov.	12	31	23903	0.0013	0.9982
Nov.	13	28	23931	0.0012	0.9993
Nov.	14	16	23947	0.0007	1.0000

Mean Day of Migration = Sept. 17 Variance = 283.2 Days squared

Appendix Table 7. Daily sockeye salmon counts and associated statistics from Chilkoot Lake Weir, 1986.

Date		Daily Count	Cumulative Count	Daily Proportion of Total	Cumulative Proportion of Total
June	6	7	7	0.0001	0.0001
June	7	18	25	0.0002	0.0003
June	8	4	29	0.0000	0.0003
June	9	12	41	0.0001	0.0005
June	10	14	55	0.0002	0.0006
June	11	8	63	0.0001	0.0007
June	12	26	89	0.0003	0.0010
June	13	6	95	0.0001	0.0011
June	14	31	126	0.0004	0.0014
June	15	23	149	0.0003	0.0017
June	16	16	165	0.0002	0.0019
June	17	17	182	0.0002	0.0021
June	18	10	192	0.0001	0.0022
June	19	14	206	0.0002	0.0023
June	20	64	270	0.0007	0.0031
June	21	19	289	0.0002	0.0033
June	22	15	304	0.0002	0.0035
June	23	1	305	0.0000	0.0035
June	24	23	328	0.0003	0.0037
June	25	37	365	0.0004	0.0041
June	26	71	436	0.0008	0.0050
June	27	49	485	0.0006	0.0055
June	28	28	513	0.0003	0.0058
June	29	83	596	0.0009	0.0068
June	30	223	819	0.0025	0.0093
July	1	132	951	0.0015	0.0108
July	2	74	1025	0.0008	0.0116
July	3	71	1096	0.0008	0.0125
July	4	42	1138	0.0005	0.0129
July	5	232	1370	0.0026	0.0156
July	6	357	1727	0.0041	0.0196
July	7	1082	2809	0.0123	0.0319
July	8	667	3476	0.0076	0.0395
July	9	525	4001	0.0060	0.0455
July	10	563	4564	0.0064	0.0518
July	11	244	4808	0.0028	0.0546
July	12	212	5020	0.0024	0.0570
July	13	195	5215	0.0022	0.0592
July	14	236	5451	0.0027	0.0619
July	15	237	5688	0.0027	0.0646
July	16	581	6269	0.0066	0.0712
July	17	613	6882	0.0070	0.0782
July	18	310	7192	0.0035	0.0817
July	19	156	7348	0.0018	0.0835
July	20	340	7688	0.0039	0.0873
July	21	530	8218	0.0060	0.0934
July	22	824	9042	0.0094	0.1027
July	23	516	9558	0.0059	0.1086
July	24	1754	11312	0.0199	0.1285
July	25	1005	12317	0.0114	0.1399
July	26	498	12815	0.0057	0.1456
July	27	1326	14141	0.0151	0.1606
July	28	964	15105	0.0110	0.1716
July	29	1768	16873	0.0201	0.1917
July	30	1689	18562	0.0192	0.2109
July	31	1598	20160	0.0182	0.2290
Aug.	1	2026	22186	0.0230	0.2520
Aug.	2	2067	24253	0.0235	0.2755
Aug.	3	1453	25706	0.0165	0.2920
Aug.	4	2216	27922	0.0252	0.3172
Aug.	5	1630	29552	0.0185	0.3357
Aug.	6	2333	31885	0.0265	0.3622
Aug.	7	4317	36202	0.0490	0.4113
Aug.	8	4654	40856	0.0529	0.4641
Aug.	9	4960	45816	0.0563	0.5205
Aug.	10	1809	47625	0.0206	0.5410
Aug.	11	1486	49111	0.0169	0.5579
Aug.	12	1736	50847	0.0197	0.5776
Aug.	13	1486	52333	0.0169	0.5945
Aug.	14	2208	54541	0.0251	0.6196
Aug.	15	1623	56164	0.0184	0.6381
Aug.	16	1928	58092	0.0219	0.6600
Aug.	17	1203	59295	0.0137	0.6736
Aug.	18	2845	62140	0.0323	0.7059
Aug.	19	2729	64869	0.0310	0.7369
Aug.	20	882	65751	0.0100	0.7470
Aug.	21	902	66653	0.0102	0.7572

-Continued-

Appendix Table 7. Daily sockeye salmon counts and associated statistics from Chilkoot Lake Weir, 1986 (continued).

Date		Daily Count	Cumulative Count	Daily Proportion of Total	Cumulative Proportion of Total
Aug.	22	532	67185	0.0060	0.7633
Aug.	23	2746	69931	0.0312	0.7945
Aug.	24	334	70265	0.0038	0.7982
Aug.	25	1729	71994	0.0196	0.8179
Aug.	26	1372	73366	0.0156	0.8335
Aug.	27	337	73703	0.0038	0.8373
Aug.	28	68	73771	0.0008	0.8381
Aug.	29	1043	74814	0.0118	0.8499
Aug.	30	1465	76279	0.0166	0.8666
Aug.	31	1038	77317	0.0118	0.8784
Sept.	1	1526	78843	0.0173	0.8957
Sept.	2	1159	80002	0.0132	0.9089
Sept.	3	754	80756	0.0086	0.9174
Sept.	4	420	81176	0.0048	0.9222
Sept.	5	148	81324	0.0017	0.9239
Sept.	6	371	81695	0.0042	0.9281
Sept.	7	2115	83810	0.0240	0.9521
Sept.	8	1290	85100	0.0147	0.9668
Sept.	9	202	85302	0.0023	0.9691
Sept.	10	1108	86410	0.0126	0.9817
Sept.	11	113	86523	0.0013	0.9829
Sept.	12	86	86609	0.0010	0.9839
Sept.	13	157	86766	0.0018	0.9857
Sept.	14	193	86959	0.0022	0.9879
Sept.	15	161	87120	0.0018	0.9897
Sept.	16	127	87247	0.0014	0.9912
Sept.	17	104	87351	0.0012	0.9924
Sept.	18	64	87415	0.0007	0.9931
Sept.	19	61	87476	0.0007	0.9938
Sept.	20	52	87528	0.0006	0.9944
Sept.	21	38	87566	0.0004	0.9948
Sept.	22	89	87655	0.0010	0.9958
Sept.	23	169	87824	0.0019	0.9977
Sept.	24	65	87889	0.0007	0.9985
Sept.	25	35	87924	0.0004	0.9989
Sept.	26	7	87931	0.0001	0.9989
Sept.	27	6	87937	0.0001	0.9990
Sept.	28	10	87947	0.0001	0.9991
Sept.	29	9	87956	0.0001	0.9992
Sept.	30	9	87965	0.0001	0.9993
Oct.	1	0	87965	0.0000	0.9993
Oct.	2	15	87980	0.0002	0.9995
Oct.	3	11	87991	0.0001	0.9996
Oct.	4	2	87993	0.0000	0.9996
Oct.	5	18	88011	0.0002	0.9999
Oct.	6	9	88020	0.0001	1.0000
Oct.	7	0	88020	0.0000	1.0000
Oct.	8	1	88021	0.0000	1.0000
Oct.	9	1	88022	0.0000	1.0000
Oct.	10	0	88022	0.0000	1.0000
Oct.	11	1	88023	0.0000	1.0000
Oct.	12	0	88023	0.0000	1.0000
Oct.	13	0	88023	0.0000	1.0000
Oct.	14	0	88023	0.0000	1.0000
Oct.	15	0	88023	0.0000	1.0000
Oct.	16	0	88023	0.0000	1.0000
Oct.	17	0	88023	0.0000	1.0000
Oct.	18	0	88023	0.0000	1.0000
Oct.	19	0	88023	0.0000	1.0000
Oct.	20	0	88023	0.0000	1.0000
Oct.	21	1	88024	0.0000	1.0000
Oct.	22	0	88024	0.0000	1.0000
Oct.	23	0	88024	0.0000	1.0000
Oct.	24	0	88024	0.0000	1.0000
Oct.	25	0	88024	0.0000	1.0000
Oct.	26	0	88024	0.0000	1.0000
Oct.	27	0	88024	0.0000	1.0000
Oct.	28	0	88024	0.0000	1.0000
Oct.	29	0	88024	0.0000	1.0000

Mean Day of Migration = Aug. 11 Variance = 271.5 Days squared

Appendix Table 8. Age composition of the Chilkat Lake sockeye salmon escapement, by sample period and sex, 1986.

	Brood Year and Age Class							
	1982		1981		1980		1979	
	1.2	2.1	1.3	2.2	2.3	3.2	3.3	Total
Escapement Dates: (June 18 - 28)								
Sample Date: (June 23)								
Male								
Sample Number		2						2
Percent		100.0						100.0
Std. Error								0.0
Number		4						4
All Fish								
Sample Number		2						2
Percent		100.0						100.0
Std. Error								
Number		4						4
Escapement Dates: (June 29 - August 16)								
Sample Date: (August 8)								
Male								
Sample Number	8			2				10
Percent	61.5			15.4				76.9
Std. Error	14.0			10.4				12.2
Number	486			122				608
Female								
Sample Number	2		1					3
Percent	15.4		7.7					23.1
Std. Error	10.4		7.7					12.2
Number	122		61					183
All Fish								
Sample Number	10		1	2				13
Percent	76.9		7.7	15.4				100.0
Std. Error	12.2		7.7	10.4				
Number	608		61	122				791
Escapement Dates: (August 17 - 30)								
Sample Dates: 1/								
Male								
Percent	31.6	0.9	1.4	13.4	20.9	0.4		68.6
Number	274	8	12	118	183	4		599
Female								
Percent	8.4		4.8	6.2	11.5		0.5	31.4
Number	8		42	54	101		4	275
All Fish								
Percent	40.0	0.9	6.2	19.6	32.4	0.4	0.5	100.0
Number	348	8	54	172	284	4	4	874
Escapement Dates: (August 31 - Sept. 20)								
Sample Dates: (Sept. 8 - 12)								
Male								
Sample Number	2	2	3	13	47	1		68
Percent	1.8	1.8	2.7	11.5	41.6	0.9		60.2
Std. Error	1.2	1.2	1.5	3.0	4.7	0.9		4.6
Number	236	236	353	1532	5536	118		8011
Female								
Sample Number	2		2	14	26		1	45
Percent	1.8		1.8	12.4	23.0		0.9	39.8
Std. Error	1.2		1.2	3.1	4.0		0.9	4.6
Number	236		236	1649	3063		118	5302
All Fish								
Sample Number	4	2	5	27	73	1	1	113
Percent	3.5	1.8	4.4	23.9	64.6	0.9	0.9	100.0
Std. Error	1.7	1.2	1.9	4.0	4.5	0.9	0.9	
Number	472	236	589	3181	8599	118	118	13313

-Continued-

1/ No samples were taken. The age composition for the periods immediately before and after were averaged (weighted equally) and applied to this period.

Appendix Table 8. Age composition of the Chilkat Lake sockeye salmon escapement, by sample period and sex, 1986 (continued).

	Brood Year and Age Class							
	1982		1981		1980		1979	
	1.2	2.1	1.3	2.2	2.3	3.2	3.3	Total
Escapement Dates: (Sept. 21 - Oct. 4)								
Sample Dates: (Sept. 28 - Oct. 3)								
Male								
Sample Number			3	33	97	1		134
Percent			1.2	13.4	39.3	0.4		54.3
Std. Error			0.7	2.2	3.1	0.4		3.2
Number			91	1010	2968	31		4100
Female								
Sample Number	2		1	41	62	7		113
Percent	0.8		0.4	16.6	25.1	2.8		45.7
Std. Error	0.6		0.4	2.4	2.8	1.1		3.2
Number	61		31	1255	1897	214		3458
All Fish								
Sample Number	2		4	74	159	8		247
Percent	0.8		1.6	30.0	64.4	3.2		100.0
Std. Error	0.6		0.8	2.9	3.1	1.1		
Number	61		122	2265	4865	245		7558
Escapement Dates: (Oct. 5 - 11)								
Sample Dates: (Oct. 5 - 11)								
Male								
Sample Number		1	1	16	121	2	1	142
Percent		0.4	0.4	6.2	46.5	0.8	0.4	54.6
Std. Error		0.4	0.4	1.5	3.1	0.5	0.4	3.1
Number		3	3	51	387	6	3	454
Female								
Sample Number				20	95	3		118
Percent				7.7	36.5	1.2		45.4
Std. Error				1.7	3.0	0.7		3.1
Number				64	304	10		377
All Fish								
Sample Number		1	1	36	216	5	1	260
Percent		0.4	0.4	13.8	83.1	1.9	0.4	100.0
Std. Error		0.4	0.4	2.1	2.3	0.9	0.4	
Number		3	3	115	691	16	3	831
Escapement Dates: (Oct. 12 - 18)								
Sample Dates: (Oct. 13 - 18)								
Male								
Sample Number					6			6
Percent					40.0			40.0
Std. Error					13.1			13.1
Number					10			10
Female								
Sample Number				5	4			9
Percent				33.3	26.7			60.0
Std. Error				12.6	11.8			13.1
Number				8	6			14
All Fish								
Sample Number				5	10			15
Percent				33.3	66.7			100.0
Std. Error				12.6	12.6			
Number				8	16			24
Escapement Dates: (Oct. 19 - 25)								
Sample Dates: (Oct. 19 - 24)								
Male								
Sample Number			1	6	40	1		48
Percent			1.1	6.5	43.5	1.1		52.2
Std. Error			1.1	2.6	5.2	1.1		5.2
Number			2	10	65	2		79
Female								
Sample Number				19	23	2		44
Percent				20.7	25.0	2.2		47.8
Std. Error				4.2	4.5	1.5		5.2
Number				31	38	3		72
All Fish								
Sample Number			1	25	63	3		92
Percent			1.1	27.2	68.5	3.3		100.0
Std. Error			1.1	4.7	4.9	1.9		
Number			2	41	103	5		151

-Continued-

Appendix Table 8. Age composition of the Chilkat Lake sockeye salmon escapement, by sample period and sex, 1986 (continued).

	Brood Year and Age Class							
	1982		1981		1980		1979	
	1.2	2.1	1.3	2.2	2.3	3.2	3.3	Total
Escapement Dates: (Oct. 26 - Nov. 1)								
Sample Dates: (Oct. 28 - Nov. 1)								
Male								
Sample Number			2	6	62	1	1	72
Percent			2.2	6.6	68.1	1.1	1.1	79.1
Std. Error			1.5	2.6	4.9	1.1	1.1	4.3
Number			4	11	114	2	2	133
Female								
Sample Number				4	14		1	19
Percent				4.4	15.4		1.1	20.9
Std. Error				2.2	3.8		1.1	4.3
Number				7	26		2	35
All Fish								
Sample Number			2	10	76	1	2	91
Percent			2.2	11.0	83.5	1.1	2.2	100.0
Std. Error			1.5	3.3	3.9	1.1	1.5	
Number			4	18	140	2	4	168
Escapement Dates: (Nov. 2 - 8)								
Sample Dates: (Nov. 2 - 7)								
Male								
Sample Number				5	35		1	41
Percent				7.6	53.0		1.5	62.1
Std. Error				3.3	6.2		1.5	6.0
Number				8	58		2	68
Female								
Sample Number			1	3	21			25
Percent			1.5	4.5	31.8			37.9
Std. Error			1.5	2.6	5.8			6.0
Number			2	5	34			41
All Fish								
Sample Number			1	8	56		1	66
Percent			1.5	12.1	84.8		1.5	100.0
Std. Error			1.5	4.0	4.4		1.5	
Number			2	13	92		2	109
Escapement Dates: (Nov. 9 - 15)								
Sample Date: (Nov. 11)								
Male								
Sample Number				3	20			23
Percent				7.3	48.8			56.1
Std. Error				4.1	7.9			7.8
Number				9	61			70
Female								
Sample Number				4	14			18
Percent				9.8	34.1			43.9
Std. Error				4.7	7.5			7.8
Number				12	42			54
All Fish								
Sample Number				7	34			41
Percent				17.1	82.9			100.0
Std. Error				5.9	5.9			
Number				21	103			124
Combined Periods (Percentages are weighted by period escapements)								
Male								
Sample Number	10	5	10	84	428	6	3	546
Percent	4.2	1.0	1.9	12.0	39.2	0.7	<0.1	59.0
Std. Error	1.0	0.7	0.9	1.9	2.9	0.5	<0.1	2.9
Number	996	251	465	2871	9382	163	7	14135
Female								
Sample Number	6		5	110	259	12	2	394
Percent	2.1		1.5	12.9	23.0	0.9	0.5	41.0
Std. Error	0.9		0.8	1.9	2.4	0.3	0.5	2.9
Number	493		372	3085	5511	227	124	9812
All Fish								
Sample Number	16	5	15	194	687	18	5	940
Percent	6.2	1.0	3.5	24.9	62.2	1.6	0.5	100.0
Std. Error	1.1	0.7	1.2	2.5	2.8	0.6	0.5	
Number	1489	251	837	5956	14893	390	131	23947

Appendix Table 9. Age composition of the Chilkoot Lake escapement, by sex and escapement period, 1986.

	Brood Year and Age Class								
	1983	1982	1981		1980		1979		
	1.1	1.2	1.3	2.2	1.4	2.3	2.4	3.3	Total
Escapement Dates: (June 6 - June 14)									
Sample Dates: (June 12 - June 14)									
Male									
Sample Number		2	3						5
Percent		25.0	37.5						62.5
Std. Error		16.4	18.3						18.3
Number		32	46						78
Female									
Sample Number			2			1			3
Percent			25.0			12.5			37.5
Std. Error			16.4			12.5			18.3
Number			32			16			48
All Fish									
Sample Number		2	5			1			8
Percent		25.0	62.5			12.5			100.0
Std. Error		16.4	18.3			12.5			
Number		32	78			16			126
Escapement Dates: (June 15 - June 21)									
Sample Dates: (June 18 - June 20)									
Male									
Sample Number		1	1			1			3
Percent		25.0	25.0			25.0			75.0
Std. Error		25.0	25.0			25.0			25.0
Number		41	40			41			122
Female									
Sample Number			1						1
Percent			25.0						25.0
Std. Error			25.0						25.0
Number			41						41
All Fish									
Sample Number		1	2			1			4
Percent		25.0	50.0			25.0			100.0
Std. Error		25.0	28.9			25.0			
Number		41	81			41			163
Escapement Dates: (June 22 - June 28)									
Sample Dates: (June 24 - June 27)									
Male									
Sample Number		1	9			1			11
Percent		5.9	52.9			5.9			64.7
Std. Error		5.9	12.5			5.9			11.9
Number		13	119			13			145
Female									
Sample Number			5			1			6
Percent			29.4			5.9			35.3
Std. Error			11.4			5.9			11.9
Number			66			13			79
All Fish									
Sample Number		1	14			2			17
Percent		5.9	82.4			11.8			100.0
Std. Error		5.9	9.5			8.1			
Number		13	185			26			224
Escapement Dates: (June 29 - July 5)									
Sample Dates: (June 30 - July 5)									
Male									
Sample Number		13	13	1		2			29
Percent		33.3	33.3	2.6		5.1			74.4
Std. Error		7.6	7.6	2.6		3.6			7.1
Number		286	285	22		44			637
Female									
Sample Number			10						10
Percent			25.6						25.6
Std. Error			7.1						7.1
Number			220						220
All Fish									
Sample Number		13	23	1		2			39
Percent		33.3	59.0	2.6		5.1			100.0
Std. Error		7.6	8.0	2.6		3.6			
Number		286	505	22		44			857

-Continued-

Appendix Table 9. Age composition of the Chilkoot Lake escapement, by sex and escapement period, 1986 (continued).

	Brood Year and Age Class								
	1983	1982	1981		1980		1979		
	1.1	1.2	1.3	2.2	1.4	2.3	2.4	3.3	Total
Escapement Dates:	(July 6 - July 12)								
Sample Dates:	(July 6 - July 12)								
Male									
Sample Number		29	37	3	1	7			77
Percent		22.3	28.5	2.3	0.8	5.4			59.2
Std. Error		3.7	4.0	1.3	0.8	2.0			4.3
Number		814	1039	84	28	197			2162
Female									
Sample Number		4	43			6			53
Percent		3.1	33.1			4.6			40.8
Std. Error		1.5	4.1			1.8			4.3
Number		113	1207			168			1488
All Fish									
Sample Number		33	80	3	1	13			130
Percent		25.4	61.5	2.3	0.8	10.0			100.0
Std. Error		3.8	4.3	1.3	0.8	2.6			
Number		927	2246	84	28	365			3650
Escapement Dates:	(July 13 - July 19)								
Sample Dates:	(July 13 - July 17)								
Male									
Sample Number		14	19	1		4			38
Percent		23.7	32.2	1.7		6.8			64.4
Std. Error		5.6	6.1	1.7		3.3			6.3
Number		552	750	39		158			1499
Female									
Sample Number			15		2	4			21
Percent			25.4		3.4	6.8			35.6
Std. Error			5.7		2.4	3.3			6.3
Number			592		79	158			829
All Fish									
Sample Number		14	34	1	2	8			59
Percent		23.7	57.6	1.7	3.4	13.6			100.0
Std. Error		5.6	6.5	1.7	2.4	4.5			
Number		552	1342	39	79	316			2328
Escapement Dates:	(July 20 - July 26)								
Sample Dates:	(July 20 - July 26)								
Male									
Sample Number		40	47	4	1	11	1		104
Percent		23.1	27.2	2.3	0.6	6.4	0.6		60.1
Std. Error		3.2	3.4	1.1	0.6	1.9	0.6		3.7
Number		1264	1485	126	32	348	32		3287
Female									
Sample Number		3	54			12			69
Percent		1.7	31.2			6.9			39.9
Std. Error		1.0	3.5			1.9			3.7
Number		95	1706			379			2180
All Fish									
Sample Number		43	101	4	1	23	1		173
Percent		24.9	58.4	2.3	0.6	13.3	0.6		100.0
Std. Error		3.3	3.8	1.1	0.6	2.6	0.6		
Number		1359	3191	126	32	727	32		5467
Escapement Dates:	(July 27 - August 2)								
Sample Dates:	(July 27 - August 2)								
Male									
Sample Number	1	51	107	6		17	1		183
Percent	0.4	19.0	39.8	2.2		6.3	0.4		68.0
Std. Error	0.4	2.4	3.0	0.9		1.5	0.4		2.8
Number	43	2169	4548	255		723	43		7781
Female									
Sample Number		4	63	2		17			86
Percent		1.5	23.4	0.7		6.3			32.0
Std. Error		0.7	2.6	0.5		1.5			2.8
Number		170	2679	85		723			3657
All Fish									
Sample Number	1	55	170	8		34	1		269
Percent	0.4	20.4	63.2	3.0		12.6	0.4		100.0
Std. Error	0.4	2.5	2.9	1.0		2.0	0.4		
Number	43	2339	7227	340		1446	43		11438

-Continued-

Appendix Table 9. Age composition of the Chilkoot Lake escapement, by sex and escapement period, 1986 (continued).

	Brood Year and Age Class								
	1983	1982	1981		1980		1979		
	1.1	1.2	1.3	2.2	1.4	2.3	2.4	3.3	Total
Escapement Dates:	(August 3 - August 9)								
Sample Dates:	(August 3 - August 9)								
Male									
Sample Number	54	152	5	2	35				248
Percent	12.4	34.9	1.1	0.5	8.0				57.0
Std. Error	1.6	2.3	0.5	0.3	1.3				2.4
Number	2677	7534	248	99	1735				12293
Female									
Sample Number	12	147	4		24				187
Percent	2.8	33.8	0.9		5.5				43.0
Std. Error	0.8	2.3	0.5		1.1				2.4
Number	595	7287	198		1190				9270
All Fish									
Sample Number	66	299	9	2	59				435
Percent	15.2	68.7	2.1	0.5	13.6				100.0
Std. Error	1.7	2.2	0.7	0.3	1.6				
Number	3272	14821	446	99	2925				21563
Escapement Dates:	(August 10 - August 16)								
Sample Dates:	(August 10 - August 16)								
Male									
Sample Number	33	96	5	1	22				157
Percent	12.8	37.2	1.9	0.4	8.5				60.9
Std. Error	2.1	3.0	0.9	0.4	1.7				3.0
Number	1570	4567	238	48	1047				7470
Female									
Sample Number	2	80	2	1	16				101
Percent	0.8	31.0	0.8	0.4	6.2				39.1
Std. Error	0.5	2.9	0.5	0.4	1.5				3.0
Number	95	3807	95	48	761				4806
All Fish									
Sample Number	35	176	7	2	38				258
Percent	13.6	68.2	2.7	0.8	14.7				100.0
Std. Error	2.1	2.9	1.0	0.5	2.2				
Number	1665	8374	333	96	1808				12276
Escapement Dates:	(August 17 - August 23)								
Sample Dates:	(August 17 - August 23)								
Male									
Sample Number	10	87	6	1	29				133
Percent	4.4	38.2	2.6	0.4	12.7				58.3
Std. Error	1.4	3.2	1.1	0.4	2.2				3.3
Number	519	4518	311	52	1506				6906
Female									
Sample Number	2	74	1	1	17				95
Percent	0.9	32.5	0.4	0.4	7.5				41.7
Std. Error	0.6	3.1	0.4	0.4	1.7				3.3
Number	104	3842	52	52	883				4933
All Fish									
Sample Number	12	161	7	2	46				228
Percent	5.3	70.6	3.1	0.9	20.2				100.0
Std. Error	1.5	3.0	1.1	0.6	2.7				
Number	623	8360	363	104	2389				11839
Escapement Dates:	(August 24 - August 30)								
Sample Dates:	(August 25 - August 30)								
Male									
Sample Number	4	106	2	1	36				149
Percent	1.8	46.5	0.9	0.4	15.8				65.4
Std. Error	0.9	3.3	0.6	0.4	2.4				3.2
Number	111	2951	56	28	1002				4148
Female									
Sample Number	2	60			17				79
Percent	0.9	26.3			7.5				34.6
Std. Error	0.6	2.9			1.7				3.2
Number	56	1671			473				2200
All Fish									
Sample Number	6	166	2	1	53				228
Percent	2.6	72.8	0.9	0.4	23.2				100.0
Std. Error	1.1	3.0	0.6	0.4	2.8				
Number	167	4622	56	28	1475				6348

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Appendix Table 9. Age composition of the Chilkoot Lake escapement, by sex and escapement period, 1986 (continued).

	Brood Year and Age Class								
	1983	1982	1981		1980		1979		
	1.1	1.2	1.3	2.2	1.4	2.3	2.4	3.3	Total
Escapement Dates:	(August 31 - Sept. 6)								
Sample Dates:	(August 31 - Sept. 6)								
Male									
Sample Number		2	83	1	1	36	1		124
Percent		1.0	43.2	0.5	0.5	18.8	0.5		64.6
Std. Error		0.7	3.6	0.5	0.5	2.8	0.5		3.5
Number		56	2342	28	28	1016	28		3498
Female									
Sample Number			45	1		22			68
Percent			23.4	0.5		11.5			35.4
Std. Error			3.1	0.5		2.3			3.5
Number			1269	28		621			1918
All Fish									
Sample Number		2	128	2	1	58	1		192
Percent		1.0	66.7	1.0	0.5	30.2	0.5		100.0
Std. Error		0.7	3.4	0.7	0.5	3.3	0.5		
Number		56	3611	56	28	1637	28		5416
Escapement Dates:	(Sept. 7 - Sept. 13)								
Sample Dates:	(Sept. 7 - Sept. 10)								
Male									
Sample Number			47			11			58
Percent			50.0			11.7			61.7
Std. Error			5.2			3.3			5.0
Number			2536			593			3129
Female									
Sample Number		1	26	1		7		1	36
Percent		1.1	27.7	1.1		7.4		1.1	38.3
Std. Error		1.1	4.6	1.1		2.7		1.1	5.0
Number		54	1402	54		378		54	1942
All Fish									
Sample Number		1	73	1		18		1	94
Percent		1.1	77.7	1.1		19.1		1.1	100.0
Std. Error		1.1	4.3	1.1		4.1		1.1	
Number		54	3938	54		971		54	5071
Escapement Dates:	(Sept. 14 - Oct. 29)								
Sample Date:	(Sept. 14)								
Male									
Sample Number			4	1		1			6
Percent			30.8	7.7		7.7			46.2
Std. Error			13.3	7.7		7.7			14.4
Number			387	97		97			581
Female									
Sample Number			2	1		4			7
Percent			15.4	7.7		30.8			53.8
Std. Error			10.4	7.7		13.3			14.4
Number			193	97		387			677
All Fish									
Sample Number			6	2		5			13
Percent			46.2	15.4		38.5			100.0
Std. Error			14.4	10.4		14.0			
Number			580	194		484			1258
Combined Periods (Percentages are weighted by period escapements)									
Male									
Sample Number	1	254	811	35	8	213	3		1325
Percent	<0.1	11.5	37.7	1.7	0.4	9.7	0.1		61.0
Std. Error	<0.1	0.7	1.1	0.3	0.1	0.7	0.1		1.1
Number	43	10104	33147	1504	315	8520	103		53736
Female									
Sample Number		30	627	12	4	148		1	822
Percent		1.5	29.6	0.7	0.2	7.0		0.1	39.0
Std. Error		0.3	1.0	0.2	0.1	0.6		0.1	1.1
Number		1282	26014	609	179	6150		54	34288
All Fish									
Sample Number	1	284	1438	47	12	361	3	1	2147
Percent	<0.1	12.9	67.2	2.4	0.6	16.7	0.1	0.1	100.0
Std. Error	<0.1	0.7	1.0	0.4	0.2	0.8	0.1	0.1	
Number	43	11386	59161	2113	494	14670	103	54	88024

Appendix Table 10. Age composition of the Chilkat River Mainstem escapement samples, by sex, 1986.

	Brood Year and Age Class								
	1983	1982		1981		1980		1979	
	0.2	0.3	1.2	0.4	1.3	1.4	2.3	2.4	Total
Sample Date:	(October 9)								
Male									
Sample Number	6	28	15	1	15	1		1	67
Percent	5.3	24.6	13.2	0.9	13.2	0.9		0.9	58.8
Std. Error	2.1	4.0	3.2	0.9	3.2	0.9		0.9	4.6
Female									
Sample Number	1	28	2		15		1		47
Percent	0.9	24.6	1.8		13.2		0.9		41.2
Std. Error	0.9	4.0	1.2		3.2		0.9		4.6
All Fish									
Sample Number	7	56	17	1	30	1	1	1	114
Percent	6.1	49.1	14.9	0.9	26.3	0.9	0.9	0.9	100.0
Std. Error	2.3	4.7	3.4	0.9	4.1	0.9	0.9	0.9	

Appendix Table 11. Age composition of the Lace River escapement samples, by sex, 1986.

	Brood Year and Age Class						
	1983		1982		1981	1980	
	0.2	1.1	0.3	1.2	1.3	2.3	Total
Sample Dates:	(August 23-August 24)						
Male							
Sample Number	5	4	23	9	26	1	68
Percent	2.6	2.1	12.2	4.8	13.8	0.5	36.0
Std. Error	1.2	1.0	2.4	1.6	2.5	0.5	3.5
Female							
Sample Number			44	15	61	1	121
Percent			23.3	7.9	32.3	0.5	64.0
Std. Error			3.1	2.0	3.4	0.5	3.5
All Fish							
Sample Number	5	4	67	24	87	2	189
Percent	2.6	2.1	35.4	12.7	46.0	1.1	100.0
Std. Error	1.2	1.0	3.5	2.4	3.6	0.7	

Appendix Table 12. Length composition of the Lynn Canal gill net catch of Chilkoot Lake sockeye salmon by sex, age and fishing period, 1986.

		Brood Year and Age Class						
		1982	1981		1980		1979	
		1.2	1.3	2.2	1.4	2.3	2.4	3.3
Statistical Week 25 (June 15 - 21)								
Male	Avg. Length		566.0			565.0	610.0	
	Std. Error		11.1					
	Sample Size		10			1	1	
Female	Avg. Length		563.0					
	Std. Error		7.6					
	Sample Size		10					
All Fish	Avg. Length		564.5			565.0	610.0	
	Std. Error		6.5					
	Sample Size		20			1	1	
Statistical Week 26 (June 22 - 28)								
Male	Avg. Length	524.2	527.6	475.0		593.3		
	Std. Error	8.1	40.3			14.5		
	Sample Size	6	20	1		3		
Female	Avg. Length	478.3	576.3			553.3		
	Std. Error	28.5	2.9			6.0		
	Sample Size	3	35			3		
All Fish	Avg. Length	508.9	558.6	475.0		573.3		
	Std. Error	12.4	14.9			11.4		
	Sample Size	9	55	1		6		
Statistical Week 27 (June 29 - July 5)								
Male	Avg. Length	479.5	579.3		635.0	578.0	582.5	
	Std. Error	10.4	3.4			8.8	17.5	
	Sample Size	11	61		1	10	2	
Female	Avg. Length		567.0		575.0	577.5		
	Std. Error		3.0			17.5		
	Sample Size		33		1	2		
All Fish	Avg. Length	479.5	574.9		605.0	577.9	582.5	
	Std. Error	10.4	2.5		30.0	7.6	17.5	
	Sample Size	11	94		2	12	2	
Statistical Week 28 (July 6 - 12)								
Male	Avg. Length	482.5	578.9					
	Std. Error	17.5	6.6					
	Sample Size	2	9					
Female	Avg. Length	510.0	565.0			561.0		
	Std. Error	6.1	3.7			14.0		
	Sample Size	4	16			5		
All Fish	Avg. Length	500.8	570.0			561.0		
	Std. Error	8.3	3.5			14.0		
	Sample Size	6	25			5		
Statistical Week 29 (July 13 - 19)								
Male	Avg. Length	523.0	588.5			564.0	620.0	
	Std. Error	6.8	6.5			10.3		
	Sample Size	10	13			5	1	
Female	Avg. Length	483.0	569.6		610.0	552.5		
	Std. Error	17.8	3.5			2.5		
	Sample Size	5	25		1	2		
All Fish	Avg. Length	509.7	576.1		610.0	560.7	620.0	
	Std. Error	8.7	3.5			7.4		
	Sample Size	15	38		1	7	1	

-Continued-

Appendix Table 12. Length composition of the Lynn Canal gill net catch of Chilkoot Lake sockeye salmon by sex, age and fishing period, 1986 (continued).

		Brood Year and Age Class						
		1982	1981		1980		1979	
		1.2	1.3	2.2	1.4	2.3	2.4	3.3
Statistical Week 30 (July 20 - 26)								
Male	Avg. Length	495.7	574.2			571.4		
	Std. Error	14.8	3.7			12.3		
	Sample Size	7	49			7		
Female	Avg. Length	551.7	569.1			572.8		
	Std. Error	20.9	2.9			9.1		
	Sample Size	3	49			9		
All Fish 1/	Avg. Length	512.7	571.6			570.8		
	Std. Error	12.9	2.3			6.7		
	Sample Size	11	106			18		
Statistical Week 31 (July 27 - August 2)								
Male	Avg. Length	503.8	574.9	470.0	600.0	567.2		
	Std. Error	6.6	3.4			8.5		
	Sample Size	26	60	1	1	9		
Female	Avg. Length	492.5	566.3	487.5	605.0	580.0		
	Std. Error	4.8	3.1	42.5	5.0	5.8		
	Sample Size	4	52	2	2	3		
All Fish	Avg. Length	502.3	570.9	481.7	603.3	570.4		
	Std. Error	5.8	2.3	25.2	3.3	6.6		
	Sample Size	30	112	3	3	12		
Statistical Week 32 (August 3 - 9)								
Male	Avg. Length	535.0	595.1	527.5		582.5		
	Std. Error	18.1	3.3	7.5		4.2		
	Sample Size	8	50	2		10		
Female	Avg. Length	510.0	577.6	522.5		585.8		
	Std. Error	15.0	3.2	17.5		8.9		
	Sample Size	2	47	2		6		
All Fish	Avg. Length	530.0	586.6	525.0		583.8		
	Std. Error	14.8	2.4	7.9		4.1		
	Sample Size	10	97	4		16		
Statistical Week 33 (August 10 - 16)								
Male	Avg. Length	503.6	594.4	515.0		592.1		
	Std. Error	17.3	2.8			4.4		
	Sample Size	7	45	1		12		
Female	Avg. Length	505.0	585.4	460.0		566.7		
	Std. Error		4.7			6.4		
	Sample Size	1	36	1		6		
All Fish	Avg. Length	503.8	590.4	487.5		583.6		
	Std. Error	15.0	2.6	27.5		4.6		
	Sample Size	8	81	2		18		
Statistical Week 34 (August 17 - 23)								
Male	Avg. Length		599.2		635.0	598.2	635.0	
	Std. Error		2.2		5.0	6.3		
	Sample Size		63		2	11	1	
Female	Avg. Length	486.3	585.6	455.0		580.4		
	Std. Error	10.1	3.5			6.1		
	Sample Size	4	40	1		12		
All Fish	Avg. Length	486.3	593.9	455.0	635.0	588.9	635.0	
	Std. Error	10.1	2.0		5.0	4.7		
	Sample Size	4	103	1	2	23	1	

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Appendix Table 12. Length composition of the Lynn Canal gill net catch of Chilkoot Lake sockeye salmon by sex, age and fishing period, 1986 (continued).

		Brood Year and Age Class						
		1982	1981		1980		1979	
		1.2	1.3	2.2	1.4	2.3	2.4	3.3
Statistical Week 35 (August 24 - 30)								
Male	Avg. Length	486.0	600.7			592.0		590.0
	Std. Error	25.8	2.6			7.5		
	Sample Size	5	80			15		1
Female	Avg. Length	525.0	584.3		615.0	573.8		
	Std. Error		1.8			6.8		
	Sample Size	1	85		1	8		
All Fish 1/	Avg. Length	492.5	592.1		615.0	585.7		590.0
	Std. Error	22.0	1.7			5.7		
	Sample Size	6	167		1	23		1
Statistical Week 36 (August 31 - Sept. 6)								
Male	Avg. Length	480.0	605.6			599.3		
	Std. Error		3.3			5.1		
	Sample Size	1	34			7		
Female	Avg. Length		582.7		610.0	625.0		
	Std. Error		4.6					
	Sample Size		11		1	2		
All Fish	Avg. Length	480.0	600.0		610.0	605.0		
	Std. Error		3.1			5.4		
	Sample Size	1	45		1	9		
Statistical Week 37 (Sept. 7 - 13)								
Male	Avg. Length	527.5	614.3		630.0	613.0		
	Std. Error	12.5	3.2			4.4		
	Sample Size	2	30		1	5		
Female	Avg. Length		597.3	510.0		602.1		
	Std. Error		4.7			6.7		
	Sample Size		22	1		7		
All Fish	Avg. Length	527.5	607.1	510.0	630.0	606.7		
	Std. Error	12.5	2.9			4.5		
	Sample Size	2	52	1	1	12		
Statistical Weeks 38 - 41 (Sept. 14 - 20) October 5 - 11								
Male	Avg. Length		603.6		630.0	606.7		
	Std. Error		4.8			8.8		
	Sample Size		7		1	3		
Female	Avg. Length		587.7			588.0		
	Std. Error		5.3			11.1		
	Sample Size		11			5		
All Fish	Avg. Length		593.9		630.0	595.0		
	Std. Error		4.1			8.0		
	Sample Size		18		1	8		
Combined Periods (Unweighted)								
Male	Avg. Length	505.4	588.7	503.0	627.5	586.9	606.0	590.0
	Std. Error	4.2	1.9	12.9	5.7	2.5	11.8	
	Sample Size	85	531	5	6	98	5	1
Female	Avg. Length	500.4	577.2	492.1	603.3	578.5		
	Std. Error	6.5	1.0	14.5	6.0	2.9		
	Sample Size	27	472	7	6	70		
All Fish 1/	Avg. Length	504.2	583.2	496.7	615.4	583.1	606.0	590.0
	Std. Error	3.5	1.1	9.7	5.4	1.9	11.8	
	Sample Size	113	1013	12	12	170	5	1

1/ Includes unsexed fish totals.

Appendix Table 13. Length composition of the Lynn Canal gill net catch of Chilkat Lake sockeye salmon, by sex, age and fishing period, 1986.

		Brood Year and Age Class							
		1982	1981			1980		1979	
		1.2	1.3	2.2	1.4	2.3	3.2	2.4	3.3
Statistical Week 25 (June 15 - 21)									
Male	Avg. Length	545.0	565.8			575.0			
	Std. Error		15.8						
	Sample Size	1	6			1			
Female	Avg. Length		568.0						
	Std. Error		3.0						
	Sample Size		5						
All Fish	Avg. Length	545.0	566.8			575.0			
	Std. Error		8.4						
	Sample Size	1	11			1			
Statistical Week 26 (June 22 - 28)									
Male	Avg. Length	545.0	602.3	535.0		600.0			
	Std. Error	8.9	7.1			7.6			
	Sample Size	11	13	1		3			
Female	Avg. Length	542.1	570.0	497.5		553.3			
	Std. Error	14.0	3.9	22.5		6.0			
	Sample Size	7	28	2		3			
All Fish	Avg. Length	543.9	580.2	510.0		576.7			
	Std. Error	7.4	4.2	18.0		11.3			
	Sample Size	18	41	3		6			
Statistical Week 27 (June 29 - July 5)									
Male	Avg. Length	520.5	579.7	555.0		571.7			
	Std. Error	4.7	6.6	10.0		13.1			
	Sample Size	19	18	2		9			
Female	Avg. Length	515.0	582.0	530.0		583.3			
	Std. Error		4.9			11.1			
	Sample Size	2	25	1		6			
All Fish	Avg. Length	520.0	581.0	546.7		576.3			
	Std. Error	4.3	3.9	10.1		8.9			
	Sample Size	21	43	3		15			
Statistical Week 28 (July 6 - 12)									
Male	Avg. Length		595.0			587.5			
	Std. Error		2.9			2.5			
	Sample Size		3			2			
Female	Avg. Length	540.0	561.0	510.0		594.3			
	Std. Error	10.0	4.8			7.3			
	Sample Size	2	5	1		7			
All Fish	Avg. Length	540.0	573.8	510.0		592.8			
	Std. Error	10.0	6.9			5.7			
	Sample Size	2	8	1		9			
Statistical Week 29 (July 13 - 19)									
Male	Avg. Length	539.0	595.6	550.0	575.0	607.0			
	Std. Error	5.1	6.7	15.0		9.4			
	Sample Size	5	16	2	1	5			
Female	Avg. Length	535.0	589.3			574.5			
	Std. Error	5.8	4.0			6.7			
	Sample Size	3	14			10			
All Fish	Avg. Length	537.5	592.7	550.0	575.0	585.3			
	Std. Error	3.7	4.0	15.0		6.7			
	Sample Size	8	30	2	1	15			

-Continued-

Appendix Table 13. Length composition of the Lynn Canal gill net catch of Chilkat Lake sockeye salmon, by sex, age and fishing period, 1986 (continued).

		Brood Year and Age Class							
		1982	1981		1980			1979	
		1.2	1.3	2.2	1.4	2.3	3.2	2.4	3.3
Statistical Week 30 (July 20 - 26)									
Male	Avg. Length	557.5	577.0	566.7		593.0			
	Std. Error	17.5	13.0	12.0		8.8			
	Sample Size	2	10	3		15			
Female	Avg. Length	510.0	579.2	563.0		576.3			
	Std. Error		4.0	16.3		6.2			
	Sample Size	1	13	5		12			
All Fish 1/	Avg. Length	543.0	580.3	564.0		586.3			
	Std. Error	10.8	4.9	8.5		4.9			
	Sample Size	5	35	10		32			
Statistical Week 31 (July 27 - August 2)									
Male	Avg. Length	542.5	597.1	553.6		589.9			
	Std. Error	5.2	3.8	6.5		4.8			
	Sample Size	4	36	7		34			
Female	Avg. Length	545.0	586.5	540.0	630.0	591.8			
	Std. Error	10.0	6.3	4.5		4.5			
	Sample Size	2	20	15	1	34			
All Fish	Avg. Length	543.3	593.3	544.3	630.0	590.8			
	Std. Error	4.2	3.4	3.9		3.3			
	Sample Size	6	56	22	1	68			
Statistical Week 32 (August 3 - 9)									
Male	Avg. Length	535.0	616.4	569.3		607.6			
	Std. Error		7.0	8.4		5.2			
	Sample Size	1	11	15		43			
Female	Avg. Length	552.5	583.3	558.4		592.3			
	Std. Error	17.5	5.2	8.7		3.6			
	Sample Size	2	15	16		55			
All Fish	Avg. Length	546.7	597.3	563.7		599.0			
	Std. Error	11.7	5.3	6.0		3.1			
	Sample Size	3	26	31		98			
Statistical Week 33 (August 10 - 16)									
Male	Avg. Length	560.0	607.9	568.8		608.2	495.0		
	Std. Error	12.6	6.5	4.3		4.2			
	Sample Size	3	11	20		56	1		
Female	Avg. Length	555.0	608.0	554.8		597.4			
	Std. Error		5.6	4.3		2.6			
	Sample Size	1	10	28		63			
All Fish	Avg. Length	558.8	608.0	560.6		602.5	495.0		
	Std. Error	9.0	4.2	3.2		2.5			
	Sample Size	4	21	48		119	1		
Statistical Week 34 (August 17 - 23)									
Male	Avg. Length	547.5	592.5	578.4		605.3			
	Std. Error	12.5	17.4	7.4		4.2			
	Sample Size	2	4	19		48			
Female	Avg. Length		591.3	564.2		594.7			
	Std. Error		14.3	5.1		3.7			
	Sample Size		4	33		55			
All Fish	Avg. Length	547.5	591.9	569.4		599.7			
	Std. Error	12.5	10.4	4.3		2.8			
	Sample Size	2	8	52		103			

-Continued-

Appendix Table 13. Length composition of the Lynn Canal gill net catch of Chilkat Lake sockeye salmon, by sex, age and fishing period, 1986 (continued).

		Brood Year and Age Class							
		1982	1981		1980			1979	
		1.2	1.3	2.2	1.4	2.3	3.2	2.4	3.3
Statistical Week 35 (August 24 - 30)									
Male	Avg. Length		600.0	579.3		623.2			
	Std. Error			6.5		4.9			
	Sample Size		1	7		14			
Female	Avg. Length		610.0	538.8		607.9	530.0		
	Std. Error			17.1		4.9	30.0		
	Sample Size		1	4		14	2		
All Fish 1/	Avg. Length		605.0	563.3		611.9	530.0		
	Std. Error		5.0	8.6		3.9	30.0		
	Sample Size		2	12		35	2		
Statistical Week 36 (August 31 - Sept. 6)									
Male	Avg. Length	530.0	640.0	565.8		622.5	543.3		
	Std. Error		5.0	4.9		3.7	4.4		
	Sample Size	1	2	39		53	3		
Female	Avg. Length			552.4		608.0	570.0		
	Std. Error			3.0		2.4			
	Sample Size			56		64	1		
All Fish	Avg. Length	530.0	640.0	557.9		614.6	550.0		
	Std. Error		5.0	2.8		2.2	7.4		
	Sample Size	1	2	95		117	4		
Statistical Week 37 (Sept. 7 - 13)									
Male	Avg. Length	525.0		580.8		626.0	583.8		
	Std. Error			4.4		4.2	14.8		
	Sample Size	1		30		35	4		
Female	Avg. Length			547.9		607.0	573.3		
	Std. Error			3.3		4.8	10.1		
	Sample Size			26		22	3		
All Fish	Avg. Length	525.0		565.5		618.7	579.3		
	Std. Error			3.6		3.4	9.0		
	Sample Size	1		56		57	7		
Statistical Weeks 38 - 41 (Sept. 14 - 20) October 5 - 11									
Male	Avg. Length		637.5	583.6		625.5	577.5	600.0	620.0
	Std. Error		12.5	3.7		1.6	3.2		
	Sample Size		2	73		135	4	1	1
Female	Avg. Length		616.7	559.9		611.3	544.3		585.0
	Std. Error		3.3	2.5		1.7	10.3		
	Sample Size		3	76		123	7		1
All Fish	Avg. Length		625.0	571.5		618.8	556.4	600.0	602.5
	Std. Error		6.7	2.4		1.2	8.2		17.5
	Sample Size		5	149		258	11	1	2
Combined Periods (Unweighted)									
Male	Avg. Length	535.5	595.7	575.1	575.0	613.7	564.2	600.0	620.0
	Std. Error	3.4	2.6	2.0		1.4	9.2		
	Sample Size	50	133	218	1	453	12	1	1
Female	Avg. Length	538.5	582.7	554.9	630.0	600.4	550.8		585.0
	Std. Error	5.7	2.0	1.6		1.1	8.0		
	Sample Size	20	143	263	1	468	13		1
All Fish 1/	Avg. Length	536.6	588.8	564.0	602.5	606.8	557.2	600.0	602.5
	Std. Error	2.8	1.6	1.3	27.5	0.9	6.1		17.5
	Sample Size	72	288	484	2	933	25	1	2

1/ Includes unsexed fish totals

Appendix Table 14. Length composition of the Lynn Canal gill net catch of Berners Bay/ Chilkat Mainstem sockeye salmon, by sex, age and fishing period, 1986.

		Brood Year and Age Class						
		1983	1982		1981			1980
		0.2	0.3	1.2	0.4	1.3	2.2	2.3
Statistical Week 25 (June 15 - 21)								
Male	Avg. Length							
	Std. Error							
	Sample Size							
Female	Avg. Length		555.0			590.0		
	Std. Error							
	Sample Size		1			1		
All Fish	Avg. Length		555.0			590.0		
	Std. Error							
	Sample Size		1			1		
Statistical Week 26 (June 22 - 28)								
Male	Avg. Length		584.4	470.0		585.6	450.0	
	Std. Error		4.2	38.8		5.5		
	Sample Size		26	3		16	1	
Female	Avg. Length		568.6	550.0		567.9		
	Std. Error		3.6			6.2		
	Sample Size		32	1		12		
All Fish	Avg. Length		575.7	490.0		578.0	450.0	
	Std. Error		2.9	34.0		4.4		
	Sample Size		58	4		28	1	
Statistical Week 27 (June 29 - July 5)								
Male	Avg. Length	520.0	581.9	506.1		580.8		605.0
	Std. Error	5.0	3.3	9.7		5.4		2.9
	Sample Size	2	32	14		36		3
Female	Avg. Length		568.9			575.0		605.0
	Std. Error		4.1			3.1		
	Sample Size		9			18		1
All Fish	Avg. Length	520.0	579.0	506.1		578.9		605.0
	Std. Error	5.0	2.9	9.7		3.7		2.0
	Sample Size	2	41	14		54		4
Statistical Week 28 (July 6 - 12)								
Male	Avg. Length	491.7	578.1	504.7		586.4		560.0
	Std. Error	14.5	3.0	11.8		3.8		
	Sample Size	6	39	15		37		1
Female	Avg. Length		568.8	493.8		570.7		560.0
	Std. Error		2.6	11.6		4.0		
	Sample Size		30	4		29		1
All Fish	Avg. Length	491.7	574.1	502.4		579.5		560.0
	Std. Error	14.5	2.1	9.6		2.9		
	Sample Size	6	69	19		66		2
Statistical Week 29 (July 13 - 19)								
Male	Avg. Length		596.0	527.5		530.0		
	Std. Error		8.0	17.5				
	Sample Size		5	2		1		
Female	Avg. Length		581.3	530.0		543.0		
	Std. Error		8.3			9.6		
	Sample Size		4	1		5		
All Fish	Avg. Length		589.4	528.3		540.8		
	Std. Error		6.0	10.1		8.1		
	Sample Size		9	3		6		
Statistical Week 30 (July 20 - 26)								
Male	Avg. Length	512.5	582.5	505.0		570.0		
	Std. Error	62.5	5.2	25.0		10.8		
	Sample Size	2	10	2		8		
Female	Avg. Length		573.8			565.0		
	Std. Error		5.2			17.1		
	Sample Size		4			5		
All Fish	1/Avg. Length	512.5	577.8	511.7		565.8		
	Std. Error	62.5	4.4	15.9		7.0		
	Sample Size	2	20	3		18		

-Continued-

Appendix Table 14. Length composition of the Lynn Canal gill net catch of Berners Bay/ Chilkat Mainstem sockeye salmon, by sex, age and fishing period, 1986 (continued).

		Brood Year and Age Class						
		1983	1982			1981		1980
		0.2	0.3	1.2	0.4	1.3	2.2	2.3
Statistical Week 31	(July 27 - August 2)							
Male	Avg. Length		585.0	505.0		587.5		570.0
	Std. Error		8.5	30.0		5.5		
	Sample Size		8	2		16		1
Female	Avg. Length		570.0	500.0		577.5		
	Std. Error		11.5			10.3		
	Sample Size		3	1		16		
All Fish	Avg. Length		580.9	503.3		582.5		570.0
	Std. Error		6.9	17.4		5.8		
	Sample Size		11	3		32		1
Statistical Week 32	(August 3 - 9)							
Male	Avg. Length		596.7			610.8		
	Std. Error		7.3			9.3		
	Sample Size		3			6		
Female	Avg. Length		597.5		635.0	598.8		
	Std. Error		7.5			10.7		
	Sample Size		2		1	4		
All Fish	Avg. Length		597.0		635.0	606.0		
	Std. Error		4.6			6.9		
	Sample Size		5		1	10		
Statistical Week 33	(August 10 - 16)							
Male	Avg. Length			465.0		587.5		
	Std. Error					7.5		
	Sample Size			1		2		
Female	Avg. Length		610.0					
	Std. Error		10.0					
	Sample Size		2					
All Fish	Avg. Length		610.0	465.0		587.5		
	Std. Error		10.0			7.5		
	Sample Size		2	1		2		
Statistical Week 34	(August 17 - 23)							
Male	Avg. Length			460.0		615.0		
	Std. Error					10.0		
	Sample Size			1		2		
Female	Avg. Length							
	Std. Error							
	Sample Size							
All Fish	Avg. Length			460.0		615.0		
	Std. Error					10.0		
	Sample Size			1		2		
Statistical Week 35	(August 24 - 30)							
Male	Avg. Length							
	Std. Error							
	Sample Size							
Female	Avg. Length							
	Std. Error							
	Sample Size							
All Fish	Avg. Length		590.0					
	Std. Error							
	Sample Size		1					
Combined Periods (Unweighted)								
Male	Avg. Length	501.5	582.4	501.6		585.0	450.0	589.0
	Std. Error	13.2	1.8	6.5		2.4		10.0
	Sample Size	10	123	40		124	1	5
Female	Avg. Length		571.0	507.9	635.0	572.0		582.5
	Std. Error		1.9	10.6		2.8		22.5
	Sample Size		87	7	1	90		2
All Fish 1/	Avg. Length	501.5	577.6	503.0	635.0	579.1	450.0	587.1
	Std. Error	13.2	1.3	5.7		1.9		8.6
	Sample Size	10	217	48	1	219	1	7

1/ Includes unsexed fish totals

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